

# Participation in artisanal fisheries management for improved livelihoods in West Africa

A synthesis of interviews and cases from Mauritania, Senegal, Guinea and Ghana



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A synthesis of interviews and cases from Mauritania, Senegal, Guinea and Ghana

by

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## **PREPARATION OF THIS DOCUMENT**

This document is a study carried out by the FAO executed DFID-funded Sustainable Fisheries Livelihoods Programme (SFLP) [GCP/INT/735/UK] and the FAO Fisheries Department Medium Term Programme "Promotion of Coastal Fisheries Management" [MTP 234 A4]. The study aims to derive and disseminate lessons learnt on fisher participation in fisheries management as well as ways of supporting livelihoods through responsible fisheries management.

The basis for this study was provided by four SFLP country reports with case studies on fisher participation in Monitoring Control and Surveillance. Field work for those case studies was carried out in pairs by consultants and staff members from the national fisheries administrations between August 2000 and March 2001: M.O. Mohamed Vall and N.M. Moustar Nech in Mauritania; A. Sall and C.M. Diallo in Senegal; M.M. Diallo and A. Bah in Guinea; and E. Aryee and Q.Q. Ahene-Amanquator in Ghana. Further field data came from additional field visits and interviews undertaken by Philippe Cacaud, consultant, and myself (from the Medium Term Programme "Promotion of Coastal Fisheries Management") in June and July of 2001. The analysis and writing of the document took place at FAO in Rome, Italy.

## **ACKNOWLEDGEMENTS**

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In addition to the above, a number of other colleagues contributed to this study. I would especially like to thank Jeremy Turner, Chief, Fishing Technology Service, for his encouragement and support in realizing this document. I am grateful to George Everett, Rebecca Metzner, Katrine Soma and Rolf Willmann of FIPP, as well as Karin Verstralen (consultant) for critically reviewing different versions of the document and their constructive comments.

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## ABSTRACT

### Introduction

This study on "Participation in artisanal fisheries management for improved livelihoods in West Africa" was carried out in the framework of the Sustainable Fisheries Livelihoods Programme or SFLP (GCP/INT/735/UK) in collaboration with the FAO Fisheries Department Medium Term Programme "Promotion of Coastal Fisheries Management" (MTP 234 A4). It seeks to identify ways of increasing artisanal fishers' involvement in coastal fisheries management as a means for improving fisheries livelihoods.

To achieve this purpose four SFLP case study reports on Mauritania, Senegal, Guinea and Ghana were analysed, and additional interviews were held in Senegal and Ghana. The analysis focused primarily on the following topics:

- The role of artisanal fishers and government in marine fisheries management,
- Issues and constraints in existing marine fisheries management,
- The effect of marine fisheries management on artisanal fisheries' livelihoods.

### Results

Results show that artisanal fishers are generally involved in informal fisheries management measures, which coexist with formal measures initiated by the fisheries administration. Formal fisher involvement is mostly through consultation for the formulation of fisheries laws and regulations, whereas informal involvement consists of formulating and actually implementing local regulations made by community fisher committees under their own initiative.

The most effective cases concern local, informal measures, and cases where fishers and government support and complement each other. Generally speaking, however, government and fishers have different end goals, though not always, mutually exclusive objectives in fisheries. Government fisheries policy is generally based on long-term biological concerns whereas artisanal fishers tend to have short-term economic and social goals. Where fisheries management is relatively effective and has positive effects on (some) livelihoods, this is often due to aspects such as strong leadership by local persons, a vested interest of fishers and government in the mechanism, collaboration between the parties involved, clear communication processes and peer learning.

However, whether for formal or informal measures, it appears that only in a few cases are the desired effects on fisheries' livelihoods achieved, such as ensured access to resources, income, and employment. This is due to a number of factors. One factor consists of inefficient processes and procedures for communication and division of roles, responsibilities and capabilities within and between parties involved. A second factor consists of constraints with enforcement. Another factor is that different artisanal fisher groups may have diverging interests in and may be affected differently by fisheries management measures. It would seem that more powerful and influential stakeholders benefit more from these measures than poorer ones. The underlying assumption of this study, that fisheries management improves artisanal fisheries' livelihoods, is thus not self-evident, at least not in the short run. Finally, the analysis shows that stakeholders are not "passive recipients" who are only influenced by fisheries management mechanisms, but active agents that are using, modifying and sometimes ignoring or counter-acting the mechanisms, so as to achieve access to and control over resources, as well as their own, short-term goals.

## Conclusions

A number of trends can be identified which are conducive to increased collaboration between fishers and government in fisheries management measures, as well as for an increased attention for livelihoods aspects. On the fishers' side there are already existing (though not generally 'traditional') rules and committees governing fishing and there is an increasing awareness in communities for the need to protect stocks. The government has increasing interest in artisanal fisheries and already existing processes of consultation with fishers for the elaboration of management measures. In addition there are ongoing decentralization processes which promote sharing of responsibilities with local institutions for the management of natural resources and already existing participatory mechanisms such as local fisheries councils and community-based fisheries management committees.

However, a number of factors complicate increased collaboration and consensus-building between fishers and government in fisheries management measures and attention for livelihoods aspects. Different groups of fishers and processors with different interests make collaboration difficult. There is a history of strained relations between fishers and government authorities. The authorities themselves have been unable or unwilling to enforce already existing laws, a situation complicated by unclear mandates or de facto division of tasks between different government organizations concerned with fisheries and maritime affairs. Finally, communication, financing and staffing of government agencies are not always sufficient for responsible fisheries management.

## Recommendations:

To arrive at a more livelihoods-centred fisheries management two types of issues must particularly be improved upon:

1. All the phases in fisheries management, such as planning, implementation, monitoring, control and surveillance (MCS) and enforcement need to be addressed, both individually and as a whole, and clearly linked to livelihoods issues and objectives.
2. There should be a serious commitment to participation, representation, information and communication by those concerned with livelihoods and with fisheries management.

Concerning the first issue, the FAO, SFLP and partner countries should provide the following support to fishers and officials of government and other agencies:

- awareness raising and training in fisheries management, management mechanisms and management phases with reference to the Code of Conduct for Responsible Fisheries (CCRF);
- awareness raising and training on how to include livelihood considerations and objectives in fisheries management;
- exchange of experiences on fisheries management and management mechanisms through case studies, etc.

Concerning the second issue the FAO, SFLP and partner countries can provide support to fishers and officials of government and other agencies consisting of:

- awareness raising, training and exchange of experiences on participation and participatory mechanisms at national, local and community levels and supporting decentralization and the shift from consultation to co-management;
- capacity building of fishers' organizations and strengthening their representation in formal processes;
- improved collaboration and communication between stakeholders, including the poorest fishers.

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# 1 INTRODUCTION

## 1.1 The study

### 1.1.1 Background

"Participation in artisanal fisheries management for improved livelihoods in West Africa" with cases from Mauritania, Senegal, Guinea and Ghana is a study on participation in fisheries management as a means of ensuring sustainable fisheries livelihoods<sup>1</sup>.

It was undertaken between March and August, 2001 for the FAO executed Sustainable Fisheries Livelihoods Programme (SFLP) or GCP/INT/735/UK, in collaboration with the FAO Fisheries Department Medium Term Programme "Promotion of Coastal Fisheries Management" (MTP 234 A4). The SFLP is executed in partnership with 25 countries in West Africa. It has as its objective the alleviation of poverty in fisheries communities through improved capital assets (whether natural, social, financial or other resources)<sup>2</sup> and the creation of an enabling institutional environment for sustainable livelihoods in fisheries. The Medium Term Programme "Promotion of Coastal Fisheries Management" has as its objective to analyse fishery management schemes, with special attention for participatory approaches, and to record and disseminate lessons learnt<sup>3</sup>. The focus of both Programmes is on artisanal fisheries.

The present study thus aims to derive and disseminate lessons learnt on fisher participation in fisheries management in West Africa as well as ways of supporting livelihoods through responsible fisheries management<sup>4</sup>.

### 1.1.2 Justification

Sustainable fisheries livelihoods and responsible fisheries management are important issues in West Africa, and world wide. Fisheries is a growing sector contributing to employment, nutrition, trade, foreign exchange earnings, local development, etc. The SFLP estimates that, in the West African region, 5.3 million people's livelihoods depend directly on fish resources (inland as well as marine). Marine fish landings are estimated at 1.1 million tonnes annually<sup>5</sup>.

But fish resources are finite and cannot continue to sustain the trend of ever increasing catches. There is a need for responsible fisheries management to ensure that in the future a large number of people can continue to earn their livelihoods from the fisheries sector. Active involvement of the fishers themselves (as well as other stakeholder groups) is an essential element in responsible fisheries management so as to ensure that the interests of those whose livelihoods depend on fisheries are protected and that the management measures will gain wide acceptance among fishers.

<sup>1</sup> The term livelihoods is explained in the box on the next page. Pages 5 and 6 give an overview of the Sustainable Livelihoods Approach.

<sup>2</sup> The expected outputs of the project can be found in Annex 1.

<sup>3</sup> To date, the Technical Project has published two studies:

- FAO Fisheries Circular No. 957/1, *Promotion of coastal fisheries management : 1. Local-level effort regulation in Senegalese fisheries* by Gaspart and Platteau.
- FAO Circular de Pesca No. 957/2, *Promoción de la ordenación de la pesca costera : 2. Aspectos socioeconómicos y técnicos de la pesca artesanal en El Salvador, Costa Rica, Panamá, Ecuador y Colombia* by Beltrán Turriago.

<sup>4</sup> As described in FAO's Code of Conduct For Responsible Fisheries

<sup>5</sup> data from the SFLP.

There are ongoing management efforts in West Africa. States in the region have adopted legislation aimed at regulating fishing activities over the last ten years or so. This legislation often has specific sections defining the involvement of fishers in official fisheries management. In some areas, fishers organize themselves to regulate their own fishing activities. These efforts are the object of the current study.

### 1.1.3 Study objectives

The general objective of this study is to identify ways of supporting participatory fisheries management in artisanal marine fisheries, in order to achieve sustainable livelihoods for artisanal fishers.

Under the general objective for this study, three specific objectives were formulated. These are to identify:

- the role of artisanal fishers and government in marine fisheries management,
- issues and constraints in existing marine fisheries management,
- the effect of marine fisheries management on artisanal fisheries livelihoods.

The interpretation of the key terms for the purpose of this study are explained in the box below:

#### EXPLANATION OF KEY TERMS

**Artisanal** – There is no satisfactory definition of "artisanal" in the sense of "artisanal fisheries". Some very general parameters do exist, but even these are open to discussion. For example, in social and economic terms, "artisanal fisheries" sometimes implies the use of family-labour and limited investments, but this is certainly not true in many cases. The use of criteria such as technical and financial means of operating, the distances covered, or number of days at sea are not good indicators either. Although "artisanal fisheries" is generally taken to mean any non-industrial fisheries, some are almost semi-industrial.

The artisanal fisheries in the present study also vary and are not easily defined. However, very generally it can be said that the vessels consist of relatively large canoes (up to around 20m in length), with outboard engines and sometimes ice on board, which may or may not stay out at sea for several days. Owners, crew, fish processors and fish-mongers may come from the same community, and are often, though not always, related. The catch is used both for the internal market and for exports.

**Fisheries management** - Fisheries management is "(T)he integrated process of information gathering, analysis, planning, consultation, decision-making, allocation of resources and formulation and implementation, with enforcement as necessary, of regulations or rules which govern fisheries activities in order to ensure the continued productivity of the resources and accomplishment of other fisheries objectives." (FAO, 1997: 7).

**Fishers** – In this study, the term fishers refers to all those directly deriving a livelihood from fishing and related activities, including boat owners, crew, those processing and selling fish.

**Marine fisheries** – Marine fisheries refers to fishing activity in the coastal or ocean environment. Lagoons and inland waters are not taken into account in this study.

**Livelihoods** - A livelihood is defined as comprising "...the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base." (DFID, 1998: 4)

#### **1.1.4 Underlying assumptions**

The objective and justification for this study indicate a number of underlying assumptions. These are:

- overfishing is prevalent and negatively affects artisanal fishers' livelihoods;
- responsible fisheries management is required to address this problem;
- responsible fisheries management requires the active involvement of artisanal fishers;
- active involvement of artisanal fishers improves the effectiveness of fisheries management measures;
- effective fisheries management measures will improve artisanal fisheries' livelihoods.

These assumptions to some extent form the basis of the SFLP programme, which combines the Sustainable Livelihoods Approach and the Code of Conduct for Responsible Fisheries. Both of these, and the origin of the assumptions, will be explained in Section 1.3.

## **1.2 Methodology**

### **1.2.1 Information gathering and analysis**

Four SFLP reports form the basis for this study. The four reports have as their topic the participation of fisher communities in Monitoring, Control and Surveillance (MCS) mechanisms and cover Mauritania, Senegal, Guinea and Ghana. In addition to these reports, a number of interviews and field visits were carried out in Senegal and Ghana, where legal texts and regulations concerning fisheries management were studied.

The information was analysed with the three specific objectives in mind. First of all, a general overview was made of the situation of small-scale marine fisheries and of marine fisheries management, in order to clarify:

- artisanal fisher stakeholder groups and their representation,
- the organization of the fisheries administration and existing forms of involving artisanal fishers in official fisheries management,
- formal and informal rules regulating artisanal fishing.

Secondly, ten of the case studies presented in the four country reports on MCS were taken as specific examples of artisanal marine fisheries management mechanisms. They were divided into two groups – cases on surveillance at sea and cases on controls at landing sites - and analysed for the following aspects:

- the organization and functioning of the mechanism (strengths and weaknesses),
- the roles of artisanal fishers and the government in setting up, executing and enforcing the mechanism, and
- the interaction between the mechanisms and artisanal fisheries' livelihoods.

This analysis is reflected in the structure of the document (see Section 1.4).

### **1.2.2 Programming**

In terms of programming, the entire process of preparation of this study spans two years. The research for and writing of the MCS reports for Mauritania, Senegal, Guinea and Ghana were carried out between August 2000 and March 2001. In March and April 2001, ten case studies from these reports were analysed at FAO Headquarters in Rome. A start was made with the general overview. The additional interviews, field visits and analysis of legal texts in Senegal and Ghana were carried out in the last week of June and the first week of July 2001. The draft report, written up in Rome in August 2001, was circulated for comments and improved upon, and other drafts were circulated again in early 2002. The final version of the report was sent to be published in August 2002.

## 1.3 Theoretical approach

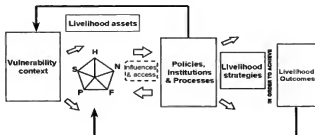
### 1.3.1 A joint perspective

The SFLP programme is based on the Sustainable Livelihoods Approach (SLA)<sup>6</sup> and uses FAO's Code of Conduct for Responsible Fisheries (CCRF)<sup>7</sup> as a major policy reference. The CCRF forms the framework for FAO's work on fisheries management. The perspective of the present study comes jointly from the SLA and the CCRF, which is why it is important to touch briefly on what they consist of, and what the relationships are between the two.

### 1.3.2 The Sustainable Livelihoods Approach (SLA)

The SLA is a framework for the analysis of livelihoods and the elements that contribute to or constrain them. The framework is shown in the diagram below:

THE SUSTAINABLE LIVELIHOODS FRAMEWORK



In SLA, the resources people can draw on for their livelihoods (be they social, human, financial, physical or natural) are called "*livelihood assets*" or "*livelihood capitals*". The *livelihood strategies* people pursue are the ways in which they use the livelihood capitals to try to ensure a stable income and a better life for themselves and their families. The strategies are influenced by *policies, institutions and processes*, that is, rules, organizations, customs etc., which determine access to the livelihood capitals. Shocks, trends and other influences outside people's control affect their livelihoods and livelihood strategies. This is known as the "*vulnerability context*". The result of the combination of capitals, policies, institutions, processes, vulnerability context and livelihood strategies are termed "*livelihood outcomes*". Definitions of these terms are given in the box below.

<sup>6</sup> DFID, 1996.

<sup>7</sup> FAO, 1995.

## DEFINITIONS OF SLA TERMS

**Livelihood capitals** These concern the resources and other assets that people can draw upon for reaching their livelihood outcomes. Five livelihood capitals are distinguished - see below (adapted from DFID, 1998: 4-9):

**1. Natural capital** – The natural resource from which the livelihoods of the communities and artisanal fishing groups are derived, e.g. the fisheries resources, agricultural land, forests.

**2. Social capital** – The networks and relationships that exist in the communities and upon which people draw in pursuit of livelihoods, e.g. social and professional organizations, associations, saving and credit groups.

**3. Human capital** – The skills, knowledge, technical know-how, ability to labour and good health important to the ability to pursue livelihood strategies.

**4. Physical capital** – The basic infrastructure, production equipment, instruments and tools which enable people to pursue their livelihoods, e.g. landing sites, navigation instruments, fishing gear, markets, transport, shelter, water, energy and communications.

**5. Financial capital** – The financial resources which are available to people to achieve their livelihood options e.g. cash, savings, supplies of credit, regular remittances or pensions, capital assets convertible to cash (cattle, livestock, jewellery, etc.).

**Livelihood strategies** are the range and combination of activities and choices that communities and individuals undertake to achieve their livelihood outcomes (adapted from the Terms of Reference for the national case studies on MCS and DFID, 1998: 4-9).

**The vulnerability context** encompasses the trends, shocks, seasonality and other external factors which affect livelihoods, e.g. population trends, economic growth, natural disaster, illness, conflict, seasonality in prices and employment (adapted from the Terms of Reference for the national case studies on MCS and DFID, 1998: 4-9).

**Policies, institutions and processes.** "taken together, form the context within which individuals and households construct and adopt livelihood strategies. As such, the PIP dimension of the SL framework embraces complex issues concerning participation, power, authority, governance, laws, policies, public service delivery and social relations as influenced by gender, caste, ethnicity, age and so on. In effect, they determine the freedom that people have to transform their assets into livelihood outcomes." (DFID, SL Guidance sheets, October 2001).

**Livelihood outcomes** are the objectives that communities and individuals actually achieve (adapted from the Terms of Reference for the national case studies on MCS and DFID, 1998: 4-9).

Linking these terms to fisheries and fisheries livelihoods for this study, the policies, institutions and processes that are particularly relevant are those relating to fisheries management, such as international agreements on fishing, official fisheries directorates, policies and laws. They also include informal, local rules and customs that regulate fishing practices. Finally, they include decentralization-related issues as a major process towards increased participation of people in resources management (whether natural, human, social, financial or physical resources). Human and social capital are important for this study as they represent the networks, organizational structures and skills needed for effective fisheries management. The vulnerability context consists of such changes as variations in demand for certain types of fish, changes in costs of inputs, increasing scarcity of fish resources, conflicts over fish resources and the risks involved in the fishing-related professions.

### 1.3.3 *FAO's Code of Conduct for Responsible Fisheries (CCRF)*

The CCRF establishes principles and standards applicable to the conservation, management and development of all fisheries. It is non-binding instrument, but states are encouraged to apply the principles and standards defined in them. The CCRF complements existing international instruments on fisheries and the environment.

In support of the implementation of Article 7 of the Code, Fisheries Management Technical Guidelines<sup>8</sup> have been produced providing a background to the need for fisheries management, the major constraints and concepts. The Guidelines address the need for information for fisheries management decisions, how to collect and interpret these data, as well as a range of possible management actions. The management process is also examined, including, for example, consultation and co-operative decision making. The box below illustrates the contents of the Guidelines. Both the SFLP and Medium Term Programme "Promotion of Coastal Fisheries Management" base their work in fisheries management on the CCRF and its Technical Guidelines, so these technical guidelines form the background against which the information in this study was analysed.<sup>9</sup>

#### **FAO TECHNICAL GUIDELINES FOR RESPONSIBLE FISHERIES - FISHERIES MANAGEMENT**

##### **1. Introduction**

- 1.1 *The need for fisheries management*
- 1.2 *The fisheries management process*
- 1.3 *Biological and environmental concepts and constraints*
- 1.4 *Technological considerations*
- 1.5 *Social and economic dimensions*
- 1.6 *Institutional concepts and functions*
- 1.7 *Time-scales in the fisheries management process*
- 1.8 *Precautionary approach*

##### **2. Management data and information requirements and use**

- 2.1 *General considerations in the collection and provision of data and information for fisheries management*
- 2.2 *Data requirements and use in the formulation of fisheries policy*
- 2.3 *Data requirements in the use and formulation of management plans*
- 2.4 *Data requirements and use in the determination of management actions and monitoring performance*

##### **3. Management measures and approaches**

- 3.1 *Options to regulate fishing*
- 3.2 *Limiting access*
- 3.3 *Management in partnership*

##### **4. The management process**

- 4.1 *Formulating management plans to reflect selected objectives and constraints*
- 4.2 *Identifying and agreeing on objectives for the fishery*
- 4.3 *Implementation*

### 1.3.4 *Links between SLA and the CCRF*

The CCRF and the SLA are complementary. The CCRF recognizes that sustainable livelihoods is one of the fundamental reasons for implementing fisheries management, as evidenced by the following statement in its Introduction:

<sup>8</sup> FAO, 1997.

<sup>9</sup> For guidelines on fisheries management, see also Cochrane (ed.), 2002



## LIVELIHOOD ISSUES AND THE CODE OF CONDUCT FOR RESPONSIBLE FISHERIES

*"Fisheries ... provide a vital source of food, employment, recreation, trade and economic well-being for people throughout the world, both for present and future generations, and should therefore be conducted in a responsible manner. ... The Code recognizes the nutritional, economic, social, environmental and cultural importance of fisheries and the interests of all those concerned with the fishery sector. The Code takes into account the biological characteristics of the resources and their environment and the interests of consumers and other users. ..." (FAO, 1995, p.1)*

The CCRF lays down a series of standards and principles which all persons and institutions concerned with fisheries are called on (or have begun) to take into account. This often requires the adjustment of PIP process for responsible and more 'equitable' fisheries. Since the CCRF is a voluntary policy instrument, its implementation must be based on a collective and consensual approach, involving stakeholders at every level (from micro to macro) of decision-making.

The objective of fisheries management, the CCRF and its Technical Guidelines is to promote responsible fisheries, including the reduction of the vulnerability of fisheries communities to fluctuations in fish resources, conflicts over those resources, the loss of rights to exploit the resources, the loss of social rights, and so on. Beyond this objective, the CCRF provides the basis for better governance in fisheries, against the background of a better articulation between States and civil society in their pursuit of a common objective: that of sustainable fisheries management. The above illustrate that fisheries management and poverty alleviation can be mutually supportive.

The SLA and the CCRF have many complementarities and similarities, in terms of principles, objectives and the approach to planning. They both aim to improve livelihoods in fisheries (with emphasis on fisheries management in the case of the CCRF) through national and local policy and institutional reforms, stakeholder participation, and sustainable fishing practices<sup>10</sup>. It is on these principles, objectives and approach that the underlying assumptions of this study (Section 1.1.4 and the box below) are based.

### REMINDER OF THE UNDERLYING ASSUMPTIONS OF THE OBJECTIVES

- *Overfishing is prevalent and negatively affects artisanal fishers' livelihoods.*
- *Responsible fisheries management is required to address this problem.*
- *Responsible fisheries management requires the active involvement of artisanal fishers.*
- *Active involvement of artisanal fishers improves the effectiveness of fisheries management measures.*
- *Effective fisheries management improves artisanal fishers' livelihoods.*

<sup>10</sup> In November 2001, in Cotonou, Bénin, the FAO held a meeting of the FAO Advisory Committee on Fisheries Research Working Party on Poverty in Small-scale Fisheries, where the links between the CCRF, SLA and poverty were discussed in detail. The results of the meeting will become available as an FAO Fisheries Report.

## 1.4 Structure of this document

In the Introduction (Section 1), the context of the study, the methodology and the SFLP and TP 234 A4 philosophy and approaches were presented.

The rest of the study is divided into two sets of analyses which were explained in the Methodology. The first part of the study concerns the general overview of artisanal fisheries (Section 2) and of fisheries administration and management (Section 3) in the marine sector. These two Sections aim to clarify the three points mentioned earlier:

- artisanal fisher stakeholder groups (Section 2.2) and their representation (Section 2.3),
- the organization of the fisheries administration (Section 3.1) and existing forms of involving artisanal fishers in official fisheries management (Section 3.2),
- formal and informal rules regulating artisanal fishing (Section 3.3)

The second part of the study concerns the ten case studies, and starts with an introduction and broad description (Sections 4.1 and 4.2). Then the cases are analysed as explained in the Methodology. In other words:

- their strengths and weaknesses (Section 5.1),
- the respective roles of artisanal fishers and the government in various phases of the mechanism (Section 5.2),
- the process of interaction between the fisheries management mechanisms and artisanal fisheries' livelihoods (Section 5.3).

### NOTE TO THE READER

*Each Section starts with "Main points in this section", with one important statement and several sub-points to orient the reader.*

*Each Section ends with a short section called "Implications for livelihoods-centred fisheries management", which gives suggestions as to how the issues dealt with in that Section could be improved from a sustainable livelihoods point of view.*

*The tendencies in support of as well as those against more livelihoods-centred fisheries management are briefly summarized in Section 6.1.*

*Section 6.1 also revisits the assumptions in the light of the findings of the study.*

*In Section 6.2 recommendations are made for ways of supporting responsible fisheries management in artisanal (marine) fisheries while aiming to achieve sustainable livelihoods for artisanal fishers.*

*As most of the data for this study was collected in Senegal and Ghana, the reader will notice a greater emphasis of the study on these two countries than on Mauritania and Guinea.*

## 2 ARTISANAL FISHERIES AND ARTISANAL FISHERS

### 2.1 Fisheries and livelihood contexts in the case study countries

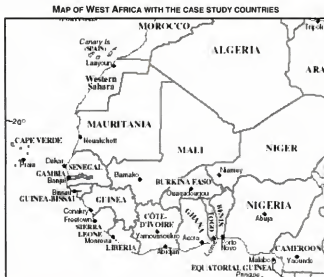
#### 2.1.1 Main points in this section

*Fisheries management in the context of a sustainable livelihoods approach needs to look wider than the fisheries sector alone, and fisheries management plans and measures need to be flexible so as to adapt to specific and changing circumstances.*

- Vulnerability aspects and livelihoods strategies in artisanal fisheries influence each other, sometimes reinforcing each other, sometimes reducing the others' impact.
- Artisanal fisheries are an increasingly important basis of livelihoods in the four countries.
- The increase of effort in artisanal fishing is a strategy which, in some cases, undermines the very basis of those livelihoods it attempts to improve and increases the fishers' vulnerability through conflict and competition over resources.
- The pressure on natural assets varies per resource, per region, and per type of fisheries.
- Artisanal fishers have developed a variety of fishing and non-fishing livelihood strategies to deal with variations in their social, economic, political and natural environment.

#### 2.1.2 Artisanal fisheries in the case study countries

The location of the case study countries - Mauritania, Senegal, Guinea and Ghana – in West Africa are shown on the map below.



Source: <http://www.un.org/Depts/Cartographic/map/profile/africa.pdf>

The table below gives some general information about the countries and their coastal areas (the data is from the FAO Country Profiles). There is clearly a great range between the countries in terms of number of inhabitants and land area, but they have in common that the area of continental shelf and length of coast are considerable.

#### GENERAL INFORMATION ABOUT THE FOUR CASE STUDY COUNTRIES AND THEIR COASTAL AREAS

| Information                                  | Mauritania | Senegal    | Guinea     | Ghana       |
|--|------------|------------|------------|-------------|
| Number of inhabitants (millions)             | ( '98) 2.5 | ( '96) 8.5 | ( '96) 7.1 | ( '96) 17.8 |
| Country area (km <sup>2</sup> )              | 1.030.700  | 196.722    | 264.000    | 238.539     |
| Area of continental shelf (km <sup>2</sup> ) | 36.000     | 23.800     | 56.000     | 23.700      |
| Length of coast (km)                         | 754        | 718        | 300        | 528         |

*FAO Country Profiles*

In all four countries fisheries, especially artisanal fisheries, is an important economic sector in terms of employment, national food security, enterprise development and foreign exchange earnings (see the data in the table below). The figures must be seen in comparison with those in the table above. In Mauritania, the number of artisanal fishers may seem low, but this country has a very low population density; in Ghana, the number of fishers is high, but so is the total population of the country. The number of fishers in Guinea is quite low in comparison to its population. Although the fisheries sector is important in terms of the livelihoods of many rural people and the nutrition of even more, fisheries for some countries represents only a few percent of the Gross Domestic Product.

#### CONTRIBUTION OF FISHERIES TO THE NATIONAL ECONOMIES

|   | Mauritania                                    | Senegal                        | Guinea   | Ghana  |
|---|---|--------------------------------|--|--|
| Employment                              | 10.000<br>artisanal<br>fishers                | 57.000<br>artisanal<br>fishers | 9.300<br>fishers,<br>processors,<br>fishmongers,<br>etc. | 110.000<br>fishers                             |
|   | 10.330<br>processors,<br>fishmongers,<br>etc. | unknown                        |  | 290.000<br>processors,<br>fishmongers,<br>etc. |
| Per capita consumption<br>per year (kg) | 14,2  | 29,9                           | 8,5  | 26,1   |
| Production (tons/year<br>live weight)   | 82.000  | 436.000                        | 64.000   | 477.000  |
| Value of imports<br>(million \$EU)      | marginal                                      | 11                             | 1  | 19   |
| Value of exports<br>(million \$EU)      | 185   | 311                            | 17   | 56   |

*FAO Country Profiles*

### 2.1.3 Vulnerability context in artisanal fisheries in the four countries

The trends of both the general economy and the artisanal fisheries sector are part of the vulnerability context in which fishers operate. These trends can be either positive or negative for fisheries livelihoods. Many of the trends have been positive, certainly in the short term. Artisanal fishing efforts and landings in Mauritania, Senegal, Guinea and Ghana have increased significantly over the past three to four decades. The number of artisanal vessels and their size has increased; the level of motorization has risen. Much more productive and diverse gear is being used, and fishing takes place further out at sea during longer fishing trips. Employment has also increased significantly.

A number of factors in fisheries and other economic sectors has given rise to this impetus to artisanal fisheries, of which just a few will be mentioned here<sup>11</sup>. First of all, liberalisation policies, such as those introduced in Guinea in 1984, have opened access to export markets for high-priced fish. International destinations for fish have concentrated on the European Union and the United States of America. More recently, however, other species of fish are being targeted and processing techniques adapted to suit Asian consumers' preferences. But local demand for fish is also rising due to population growth and the relatively cheap price for fish in comparison to other animal protein. On the supply side, new fishing techniques are being used. The sector has also grown due to unemployment and drought in inland areas, both of which have led large numbers of people to move from there to coastal areas and the growing fisheries sector.

The fisheries sector is also affected by constraints, which increase fishers' vulnerability and negatively impact on their livelihoods. Parts of these constraints are a consequence of the unbridled growth described above. An example is over-fishing and reduction of catches for certain species, although some species are not yet or only regionally affected (see box below).

#### EXAMPLE OF REGIONAL VARIATIONS IN EXPLOITATION OF FISHERIES RESOURCES

*The Ministry of Fisheries in Senegal has found different levels of exploitation for different species. Large pelagics and certain demersal fish are overexploited. Small pelagics are overexploited in certain regions.*

*Within Senegal there are differences in levels of exploitation. The intensely fished Petite Côte region and the area near the Mauritanian border -fished for small pelagics by vessels from European Union (EU) and the ex-Soviet Union- are more affected than the Grande Côte region the area around neighbouring Gambia.*

Overfishing is directly impacting fisheries livelihoods through income and profit reduction, increasing competition and conflicts over fishing grounds, fishery resources and markets.

In reaction to signs of over-fishing and increasing international attention for sustainable fishing practices (such as reflected in the CCRF), national fisheries policies which originally aimed to stimulate the sector's growth<sup>12</sup> have been adapted

<sup>11</sup> Chauveau, Jøll-Larsen and Chaboud (eds.), 2001 contains a detailed analysis and discussion of factors influencing the development of West African canoe fisheries.

<sup>12</sup> Examples are subsidies on fuel and inputs, investments in infrastructure, and the introduction of new technologies.

over the past decade. In addition to these sectoral policies, the effects of Structural Adjustment Programmes introduced in the region since the 1980's have impacted on artisanal fisheries. Devaluation of national currencies, reduction of subsidies and other macro-economic measures have caused prices for imported goods (including fishing inputs) to rise and prices for local goods to fall. The liberalization policies have also meant that national products have come into competition with international ones. General economic trends such as rising inflation have affected fisheries' livelihoods. For example, supply of fishing inputs is irregular and often dependent on projects. Fuel, particularly, is rising in cost, irregular in supply, and occasionally runs short during the fishing season, making it more costly and uncertain when and whether fishers can go out to fish. On the other hand, the prices of fish, particularly for the export market, have increased, as has demand for fish.

#### 2.1.4 Fisheries' livelihood strategies and outcomes

Fishers have developed strategies to protect their livelihoods in general, and to counter the influence of vulnerability aspects such as overfishing, increasing prices and competition. General livelihood strategies fishers have adopted include:

- multiple income earning activities to spread risk,
- investing in social relations and groups for social and economic security.
- investing and saving assets such as land, housing, a business, etc., to ensure security and future income,

Fishing-related livelihood strategies often consist of:

- the use of flexible and diverse fishing practices to spread risk over various species and markets,
- seasonal or permanent migration to richer fishing areas to ensure year-round income,
- marketing different types of products in addition to fish to spread risk.

The box below gives examples of strategies of some boat owners and crew in the face of increasing prices of inputs, increasing competition and reduced profitability of fishing activities.

##### EXAMPLES OF STRATEGIES TO PROTECT FISHER LIVELIHOODS

*In reaction to increasing prices of inputs, increasing competition and reduced profitability of fishing activities, some owners have reduced the number of vessels they operate. Some switch from using industrial vessels to artisanal canoes, which are less costly to run. Still others buy second-hand canoes instead of new ones, repair old engines, buy cheaper types, and save on fuel. Some crew, in order to bring in a maximum catch with relatively low effort, has resorted to destructive fishing practices, such as dynamite.*

The first three bullet points on fishing-related livelihood strategies are risk spreading and could be long term strategies. However, the examples in the box show that fishers may develop – or feel forced to develop – strategies that are not in their own long-term interests. For example, saving on fuel and engines or fishing with dynamite may solve profitability problems in the short run, these behaviours can have sea safety, environmental, and other problems as a result<sup>13</sup>. The livelihood outcomes for the people involved result in crew that is more vulnerable to accidents at sea, and owners that risk losing their boats, their investments, and with it, their source of income. The vulnerability of these groups has thus increased, in the long run.

<sup>13</sup> See appendix for important causes of accidents at sea in canoe fishing in West Africa as described in the four country studies. For an up-to-date global review of the status of fishermen's safety, and an assessment of opportunities, constraints and priorities for action see Petursdottir, Hannibalson, and Turner, 2001.

It is important to note that the country studies clearly show that livelihood strategies and outcomes of fishers are not just fisheries oriented, and are related to other sectors of the economy<sup>14</sup>. The strategies and outcomes are also influenced by factors such as the location, size and type of community they live in. For example, whereas villagers are often isolated and have little access to schools and hospitals, fishers in urban centres may have access to these facilities. But they could see their landing site or housing area threatened by urban development plans.

Relevant questions with respect to the community are: Is the community rural or urban? Is it well connected to towns and markets, so that commercial activities and migration are facilitated? Does it have other natural resources apart from fish and so permit a diversification of livelihood strategies? Does it have physical infrastructure to support the development of social and economic activities? Some of these issues will be briefly mentioned in the section introducing the case studies communities in Section 4 of this study.

### **2.1.5 Implications for livelihoods-centred fisheries management**

The above description of the context shows very clearly that general economic policies and trends in the four countries have greatly impacted artisanal fisheries and fuelled the growth of the sector. It also shows that fisheries are the basis for the livelihoods of thousands of people, yet fisheries tend to contribute only a few percentage points to the Gross Domestic Product. In addition, many fishers have multiple ways of assuring their livelihoods, and fishing is one of a series of strategies. These three points indicate that responsible fisheries management and fisheries policies in the context of a sustainable livelihoods approach needs to look wider than the fisheries sector alone. It also reinforces the fact that supporting poor people's livelihoods through poverty alleviation and food security will need to be dealt with in a multi-sector approach to be effective.

Within fisheries itself, conflicts and increasing competition for resources, as well as declining profits for some entrepreneurs, support the assumption of this study that there is over-fishing and that this negatively affects fishers' livelihoods. However, this appears to be true for some types of fisheries, in some regions of a country, and for some resources. Fisheries management therefore needs to distinguish between these fisheries, regions and resources and take relevant measures for each, so as to avoid depletion (or allow recovery of depleted resources) while at the same time optimising exploitation of under-exploited resources. However, it is clear from the above that this is often a difficult task, as fishers have a variety of target species, gear, and fishing strategy, all of which change as new opportunities arise.

Although fisheries laws and regulations may fix some general principles, fisheries policies, management plans and measures need to be flexible and continually updated so as to adapt to:

- differences in the livelihoods and resource situation per region,
- changing circumstances affecting the fisheries sector through time,
- fishers' changing strategies through time.

This implies that governments and other implementing agencies should create or facilitate fisheries management processes of continuous consultation with all parties involved. Even these processes will probably require adjustments and different management mechanisms per region of a country.

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<sup>14</sup> See also Allison and Ellis, 2001.

## 2.2 Who are the artisanal fishers?

### 2.2.1 Main points in this section

*The term "artisanal fishers" is too generic for the purpose of analysing participation in fisheries management and the impact thereof on livelihoods.*

- *The term "artisanal fishers" covers a wide variety of groups which can be distinguished by characteristics such as gear type, type of fisheries, professional category, sources of income, migratory status, gender, culture and nationality, amongst others.*
- *The different groups of "artisanal fishers" have their own perception of access to resources, attitudes to fisheries management and interests in participating or opposing specific management measures.*
- *Specific fisheries management measures will have a different impact on the livelihoods of each of these groups.*
- *There is a risk that only a small number – generally the most vocal or politically and economically influential - of these groups or individuals will be actively involved by fisheries administrations in formal fisheries management.*

### 2.2.2 Distinguishing between artisanal fisher groups

From the country case study reports on MCS in Mauritania, Senegal, Guinea and Ghana, it once more becomes clear that "artisanal fishers" are by no means a homogenous entity. In terms of fisheries and in terms of livelihood strategies, there are important differences between "artisanal fishers". In terms of fishing, some use specific gear, others use a variety of gear types. The target species, fishing strategies, fishing grounds, time spent at sea per fishing trip, distance from shore, etc. differ accordingly. Some fish in their native village, others migrate seasonally, yet others move elsewhere on a more permanent basis. Industrial and artisanal fisheries are seen as competing fisheries, but it is not uncommon to find artisanal fishers, crew and owners, who used to be or are seasonally active on industrial vessels. Some fish as a main activity, others have other more important economic activities and do not even consider themselves fishers. In other words, the term "artisanal fishers" covers an enormous variety of social groups.

The livelihood strategies and outcomes of each of these groups, as well as their susceptibility to and reactions to vulnerability will necessarily differ. Consequently their interest in and perception of fisheries and fisheries management will differ. The country reports indicate, for example, that migrants and urban-based fishers tend to perceive the ocean as open access, whereas residents (especially with agricultural backgrounds<sup>15</sup>) tend to perceive the sea near the community as community property to which access is controlled by community elders, in parallel to agricultural land. Another example is fishers with active and those with passive gear. Those fishing with passive gear, which remains in the water for some time (such as gill nets), tend to have specific problems as the gear may be stolen or damaged while left in the water (e.g. overnight). Those with active gear (such as handlines or purse seines) do not have this problem, but may find the passive gear getting in the way of their own fishing activities.

<sup>15</sup> Gaspart and Platteau, 2000



These types of issues may cause tensions and conflicts between groups of fishers, especially when different groups are fishing in the same zones or aiming at the same markets. Migrant - resident or ethnic dimensions can become part of a conflict. Also, seasonal or settled migrants are often seen as outsiders by residents, and are often still considered such even though they are present in the community for several generations. They often not only use different fishing gear and strategies, but speak different languages, and live in separate neighbourhoods. Nevertheless, these groups of fishers also have social and economic links between them. Inter-marriage may occur, for example.

Political aspects and regional ties between countries add another dimension to fisheries livelihoods, their vulnerability and livelihood options. Whereas Senegal and Ghana tend to have only national fishers, Senegalese and Ghanaian fishers themselves migrate long distances to other countries. It happens with certain regularity that disagreements between national governments over non-fisheries issues lead to the expulsion of migrant artisanal fishers from a country. The failure of some migrant fishers to pay the official fishing duties in the country where they fish also leads to tensions. Even though many migrant fishers have found a way of co-habiting relatively peacefully with residents, they can be particularly vulnerable because of their social position.

### **2.2.3 Professional groups in artisanal fisheries**

Even within each type of fishery, it is possible to distinguish different professional groups. Directly linked to the fishing activity are crew, owners of gear and vessels, and, financiers (of gear, canoes and fishing trips). In the post-capture phase, there are processors, and small and large scale traders.

There is a basic gender division of labour between these professional groups. Crews consist of men, processors and traders mostly consist of women. (There are exceptions: some women do fish, often seasonally, and there are large-scale male fish-traders in Senegal.) Money lending is generally done by processors and traders. These women have an interest in financing fishing trips or giving other credits, as it earns them the first or exclusive right to buy the catches. The credit relationship may be purposely maintained by traders in order to guarantee a continuous supply of fish. The more successful processors or vendors can also become owners. Whether women can do so is very much influenced by social-cultural acceptability thereof within the ethnic group to which she belongs, and therefore varies per community and per country<sup>16</sup>.

Although there are different professional groups with interests which may or may not coincide, it is important to realise that they tend to be interrelated, either directly or by marriage. For example, owners and crew often sell their part of the catch to a blood-relative or a wife. For the sale of the fish, the processors and traders themselves are often organized in such a way that economically more powerful women have younger family members or other women working for them. Together they form a network of contacts far inland to towns where their fish can be sold<sup>17</sup>.

Fisheries management measures will affect the livelihoods of all these professional groups. If, for example, a fisheries management measure results in the reduction of the number of canoes, jobs for crew, catches, and so on, this will mean that an entire family and whole networks of contacts can remain without a basis for their

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<sup>16</sup> Overaa, 1998

<sup>17</sup> Overaa, 1998

livelihoods. Yet each professional group can perceive fisheries management differently, and can be affected differently by any one measure. Restricting catches of a certain species may drive up the price, which can mean a higher income for the crew and owners of vessels, but lower profits for processors and traders.

However, in fisheries management, these differences are not always taken into account. For example, the country case studies show that “fishers” are often taken to be fishermen, and more particularly boat owners, not crew. The interests and livelihoods of other (fisher) stakeholders are left out, sometimes even without the intention or realization that this is happening.<sup>18</sup>

#### **2.2.4 Implications for livelihoods-centred fisheries management**

The existence of different “artisanal fisher” groups with different livelihoods and interests may seem self-evident. Fishers themselves and government fisheries officers working in coastal communities are certainly conscious of this fact. Nevertheless official documents and processes for fisheries management do not reflect this reality. They focus almost entirely on marine resources and some data on fleets.

Fisheries management needs to have the different fisher groups as a main focus and partner to be effective and take fisheries livelihoods into account. Working with the different groups allows management activities to be more specifically designed to each type of fishing, as well as to interactions between different types of fishing.

The implication is that engaging in responsible fisheries management or in a sustainable livelihoods approach requires governments and other agencies to:

- make the distinction between different artisanal fishers and professional groups and working with them,
- make the distinction between different fisheries and livelihood strategies, recognising the various interests and objectives involved, as well as the effects on the marine resources of each,
- foresee likely effects of fisheries management on various groups’ livelihoods,

in order to:

- ensure participation by all relevant groups,
- create relevant fisheries management measures for different fisheries,
- reduce possible negative impacts of management measures on different groups’ livelihoods or create alternatives for their livelihoods.

The above all point to the importance of the participation of artisanal fishers’ in fisheries management planning and execution; they are very aware of the different groups amongst themselves and can evaluate the impact a measure will have on their fishing activities and their livelihoods.

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<sup>18</sup> For a description of aspects related to the cultures of fishing communities, and for methodologies for gathering data see McGoodwin, 2001.

## 2.3 How are artisanal fishers organized and represented?

### 2.3.1 Main points in this section

*There are local and national artisanal fisher groups and their leaders with whom government can collaborate for livelihoods-centred fisheries management, but it has to be clear exactly who they represent.*

- *At both local and national level, there are already fisher organizations that, to some degree, create and enforce their own fisheries management rules, or that could be partners in fisheries management.*
- *Priorities of fisher organizations and leaders are set through a variety of aspects such as direct economic benefit, personal political interests, donor priorities as well as fisher group interests.*
- *Often, fisher organizations and leaders are assumed to represent the interests of all fishers – this is not generally the case and hides the fact that many groups of artisanal fishers are not represented in participatory processes.*

### 2.3.2 Fisher organizations at community level

The existence of organizations and local leadership constitutes strong human assets of fisher communities, although there are obviously variations per community.

At the level of landing sites or fishing communities, there are fisheries organizations that unite individual owners or crew engaged in a certain type of fisheries. For example, one of the case study communities that will be analysed later, (see Section 4.1) Kayar in Senegal, has a *Comité de Pêche* whose members consist of owners of handline canoes. The same community also has a *Commission des sennes tourantes*, which consists of fifteen to twenty owners of canoes with purse seines. These organizations tend to have economic advantages from the regulation of fishing activity. An example is a restriction on catches by the group, in order to create a “scarcity” of a certain type of fish in the local market, and increasing the price the group members receive for it. Apart from economic advantages these fisheries or economically oriented organizations tend to have social advantages, amongst other things by carrying out search and rescue at sea and providing a type of social security<sup>15</sup> for family in case of accident or death of a crewmember. As such, membership of such an organization is an important livelihood strategy. It should be noted, however, that the leaders and members of these organizations are often vessel owners and influential persons in the community and are not accessible to the more vulnerable fisher groups. Migrants, for example, are often not a part of such groups, or have their own, separate, groups. The country reports seem to indicate that the economic fisheries-oriented organizations appear to work rather well in comparison to other types of organizations.

Women processors and traders have similar organizations based on an economic activity, mostly for credits and savings. The organizations come in different forms, but generally involve individuals putting a certain amount of money into the group at

<sup>15</sup> This may consist of help to pay for a doctor's bill or a funeral. Part of each catch may go to the widow and children of a deceased crew member. The part often decreases over a number of years, and may stop completely after, for example, five years.

regular intervals, and one person receiving the total amount, in turn. The system is based on knowledge of the individual character of each of the members, mutual trust and group pressure to participate fairly. They therefore tend to consist of women with a certain age, level of experience and social standing, and not so much of young women who are just starting to sell fish. These savings and credit organizations, too, tend to work rather well.

Thirdly, the country reports indicate a large variety of local networks and organizations based, amongst other things, on age groups or other social and cultural groups or issues. Although not always directly aimed at fisheries, their activities do provide advantages to fisheries' livelihoods. The age groups, for example, support the financing and organising of costly social occasions such as births, funerals, and marriages. Again, such social or cultural organizations help to reduce the impact of shocks on families and individuals and joining such a group is an important livelihood strategy.

Whereas the organizations described above tend to originate from within the community, a fourth type of organization has often been promoted by projects, Non-Governmental Organizations (NGOs) and fisheries administrations (these agencies tend not to work with individuals). These are the co-operatives or similar socio-professional groups. The organizations facilitate the distribution (by projects) of inputs and credit<sup>30</sup> to artisanal fishers, processors, and traders. Once more, there tend to be separate men's and women's organizations. Apart from input distribution, advantages of the socio-professional organizations include mutual learning, increased professional credibility amongst colleagues, and again, search and rescue activities. For the women's organizations, training is generally provided on topics such as small-scale economic enterprises, literacy and numeracy, and so on. Some organizations are part of a network going up to the national level and so ensure national representation of interests.

However, especially amongst the men, this type of organization is often weakened by lack of compliance with financial contributions, low attendance at meetings, poor record keeping, and so on. Only a few individuals tend to benefit from them, and other members loose interest. Among NGO's and others working in fishing communities, fisher co-operatives are known for poor group cohesion and are notorious for low repayment levels of credits. The women's organizations, that is those for processors and traders, are normally far more effective. This difference in effectiveness between the men's and women's groups has two causes. First of all, it is in part due to the characteristics of fish processing and sale in comparison to fishing itself. Amounts invested in the former are smaller, repayment periods are shorter and generally fall within one fishing season, and group pressure is high, so reimbursement rates are high. Boat owners, on the other hand, need large amounts of money to invest in canoes and gear, which they only repay over a long period of time and no real social pressure is involved. The second reason is that the project-supported women's organizations resemble the savings and credit groups that women are already used to. The men's organizations are often not based on existing organizations.

There are, of course, collaborations, rivalries and biases within and between the organizations mentioned above, as each represents the interest of a different social, economic or professional group (or leader). For example, it was observed in various interviews that the younger generation of fishers is trying to avoid being under the elders' influence by migrating or forming separate associations and interest groups.

<sup>30</sup> This does raise the question to what extent supplying inputs for increased production are not contrary to fisheries management and sustainable livelihood objectives of avoiding over-fishing. See also Allison and Ellis, 2001.

There remains the question of which groups and which interests are represented through local organizations such as those mentioned above. Poorer groups, women and young men appear to be underrepresented, if represented at all. Where they are represented, expressing their opinion or voicing their disagreement in gatherings or in the presence of elder and more influential people may not be culturally acceptable. For example, a fishery officer noted that, during meetings of the community based management committee in Ghana, women from the Ewe ethnic group (from the Volta Region) will not speak out, whereas women from Fante communities will.

### 2.3.3 Fisher leadership at community level

The fieldwork and the four country reports indicate how dependent all the above organizations are on strong leadership. The character, person and enthusiasm of the organization's president (or another key-person) are essential to making the organization work effectively.

Apart from the leaders at the level of the organizations *within* the community (such as above) there are, generally speaking, specific leaders or heads *at* community level. They take care of social and technical issues related to fisheries. They are supported by councils of elders or representatives of different interest groups. They settle internal disputes, ensure the smooth running of activities at the landing site, carry out religious or other ceremonies, and sometimes undertake community development activities. Migrants have to request authorization from these leaders to use the community's landing site and pay tribute or taxes in the form of part of their catches. The box below gives an example from Ghana.

#### CHIEF FISHERMAN AND THE COUNCIL OF ELDERS IN GHANA

*In Ghana, each fishing village or landing site has a chief fisherman. He is in charge of fisheries matters at either the community or the landing site level (in the case of communities with more than one landing site) and represents the local fishers at the fishers' association at the national level. He works with a council of elders, which represent descent groups and/or representatives of gear groups and may or may not have to report back to other community leaders. Chief fishermen are elected, but generally come from a certain clan or family. Women fish processors and traders have a parallel leader and organization.*

Although the other three countries do not have the "chief fishermen" system, there tend to be similar positions. But there are also non-fisheries local leaders. To continue with the example from Ghana, the chief fisherman is one amongst a number of "chiefs": a village chief, a paramount chief, and so on. They all have their own role and functions. Who is higher up in the community decisional hierarchy varies per region of the country, and sometimes one person fulfils more than one leadership role. Struggles for power between such chiefs can have a strong influence on the fisheries management. Where fisheries management measures are seen to enhance the chief fisherman's (or similar) position, management measures can count on support from the chief fisherman but perhaps protest from a rival. Other chief fishermen (or similar) may fear the management measures will erode their power and do not want to become too involved in them. Some chief fishermen have difficulty with district councils, which are a relatively new structure that they did not have to deal with (or that did not 'interfere' with their decisions) before.

Local authorities and fisheries administrations collaborate with community organizations and leaders for issues like fisheries management. (The case studies of Tema, Mumford and Egyan (Ghana) and to some degree, Kayar (Senegal) that will be analysed later on are examples of this (see Section 4.2). There are occasions where fishers' leaders are at the same time (local) government representatives. To continue with the example of Ghana, a chief fisherman may be member of the District Assembly. Such leaders are in a position of representing fishers' interests to government and government's interests to fishers. But there may be occasions where their political interests clash with fisheries interests. Or a leader may be aware of, or have interest in ensuring benefits for one group of local fishers to the detriment of another.

### **2.3.4 Organization and representation at national level**

Information was gathered on national fishers' associations and NGOs active in fisheries in Senegal and Ghana. The objectives of both fisher associations and NGOs are very similar in that they support fisher representation and improved fisheries livelihoods. Activities consist mostly of support for community fishers' co-operatives and the supply of inputs such as credits, fishing equipment, and expertise for these groups.

Membership of the artisanal fishers' associations varies. The members of the main organization in Ghana, the Ghanaian National Canoe Fisherman's Council (GNCF), are chief fishermen. Membership is automatic. The chief fishermen represent the fishers of their communities or landing sites. In Senegal, the CNPS<sup>21</sup> has individual members, whereas FENAGIE's<sup>22</sup> members are economic interest groups (such as fisher co-operatives and associations) at local level. It is not generally clear whether and how the interests of different categories of artisanal fishers are represented by fisher associations: distinctions do not tend to be made between those using different gear types, owners and crew, migrants and residents, etc. However, there are often different activities for men and women, and younger and older fishers. NGOs interviewed consisted of a limited number of persons who may or may not have a background in fishing through working in the fisheries administration.

Individuals generally started NGOs with fisheries activities from a wide variety of professional backgrounds, such as development workers or persons from government administrations. Each of the three fisher associations interviewed during the field visit had different origins:

- one was initiated and supported by an NGO (Senegal),
- one by the fisheries administration (Senegal), and
- one by a chief fisherman active in politics (Ghana).

The origins of both national fishers' associations and NGOs in Senegal and Ghana lie in the 1990's, when the political situation and donor pressure in the respective countries provided encouraging conditions. Originally (at the end of the 1980's and early '90s), fisheries administrations were rather cautious of NGOs and artisanal fishers' associations and their possible political implications in a situation of *de facto* one-party political systems. But the relationship improved as countries introduced multiparty systems. At present, the fisheries administrations in Ghana and in Senegal are undertaking steps to increase the role of fishers' associations and NGOs in fisheries management.

<sup>21</sup> Conseil National de Pêcheurs du Sénégal.

<sup>22</sup> Fédération Nationale de Groupements d'Intérêt Economique.

Nevertheless, some issues from the past remain. For example, there is a certain degree of rivalry between the two fisher associations in Senegal, which has its roots in political sensitivities of the past between the NGO and the fisheries administration. Also, NGO's, fisher associations and the same group of international NGO's and development co-operation agencies generally funds fisheries administration. Donor funds, which were previously channelled through the administration, are now partly allocated directly to NGO's and artisanal fisher organization. Such concerns sometimes divide these organizations when they could benefit from collaboration.

Both NGO's and fisher associations are very important in defending fisher's livelihoods and representing their interests, but there remains the question of who exactly they defend or represent. For example, the origins of NGO's and fisher associations suggest that (some of) these organizations may in fact be closer in background to the fisheries administration than to fishers. This has positive as well as negative implications. On the one hand it begs the question of how or to what extent they represent the interests of (different) fisher groups. On the other, having links with the fisheries department may put the persons concerned in a good position to negotiate and collaborate with the administration.

Donor influence also raises questions of whose interests are represented. The activities undertaken by both NGO's and fisher associations are necessarily influenced by the source of funding and priorities of the funders. For example, in Senegal, donor priorities and greater levels of success of activities with women processors and traders have led both artisanal fishers' associations CNPS and FENAGIE to concentrate on the supply of rotating credits to this target group. Donors can influence activities towards those considered important by them.

In terms of fisheries management, fisher associations and NGO's fulfil a somewhat ambiguous position. They promote employment or poverty alleviation through increased production, credits and investment in the fisheries sector. Yet they recognise that the sector needs to be better managed and fishing efforts reduced because of over-capitalization. Like with the fisheries administrations' input support and credit programmes, there does not seem to be a clear strategy on how to deal with such apparently conflicting objectives.

In Ghana there are regular contacts between the administration, NGOs and fishers' associations with respect to fisheries management. There is a community-based fisheries management project, which supports the role of the chief fisherman and its council of elders for management purposes. But the fishers' association does not seem to be as politically influential as in Senegal. Both CNPS and FENAGIE have regular contacts with the fisheries administration on artisanal fisheries management and development matters and take part in discussions and meetings. Their political weight would appear to be due to the large size and importance of the fisheries sector, which is larger than in Ghana.

### **2.3.5 Implications for livelihoods-centred fisheries management**

The above shows that a certain number of social assets which could support fisheries management already exists. This implies that governments and other agencies can make use of such existing social assets in fisher communities and at national level. They can work in partnership with fisher organizations and leaders.

Nevertheless, when doing so it is important for these agencies to be aware of who and which interests the organizations and leaders represent and do not represent. Governments should ensure that those who have direct livelihood interests but are not represented in the "standard" organizations, are included in fisheries management decisions.

It is also clear from the above that fisher organizations and leaders are most effective when they have direct interests in an activity because it affects their livelihoods. Thus, it may not be necessary to include all fishers in a region in discussions about a certain fisheries management regulation or mechanism, but only those who are directly affected. Care should be taken in finding out which groups are directly affected and where conflicts of interest might arise.



### 3 FISHERIES ADMINISTRATION AND MANAGEMENT

#### 3.1 How is the fisheries administration organized?

##### 3.1.1 Main points in this section

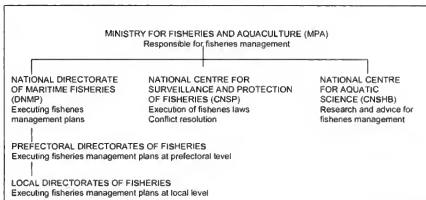
*Fisheries management and participatory approaches require clear and coherent structures, responsibilities, and processes, but fisheries administrations' role is actually becoming more diffuse.*

- Fisheries administrations' tasks have shifted from general authority in fisheries to technical support to decentralized institutions, but this is not generally reflected in the actual functioning of the administrations.
- The fisheries administration and decentralized authorities suffer from financial constraints and a lack of specialized personnel at community level.
- Views of fisheries staff on fisheries management differ between the national and the local level.
- Continuous reorganization and decentralization processes have reduced transparency and complicated communication lines (both horizontal and vertical).
- A multitude of non-fisheries institutes increasingly have key roles to play in fisheries management issues, with as one result that procedures are becoming long and complicated and the outcomes unsure.

##### 3.1.1 Structure of national fisheries departments

At the top of the organizational hierarchy of the fisheries administration is a Ministry responsible for fisheries management, which sets out policies and makes fisheries regulations. Until very recently, Ministries responsible for fisheries in Senegal, Mauritania, Guinea and Ghana also had non-fisheries responsibilities (e.g. in Ghana, fisheries fell under the Ministry of Food and Agriculture). However, at the time of the fieldwork, all four countries had a Minister specifically responsible for fisheries activities. Under the Ministry the Directorates for Fisheries plans and carry out fisheries development and management activities. The box below gives the organizational structure of the ministry of fisheries and aquaculture in Guinea, as reproduced in the report on Guinea (written early 2001).

##### ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF FISHERIES IN GUINEA



The Directorates for Fisheries normally have representations at lower administrative levels. Units, which can either be independent directorates or sub-divisions of the directorate, usually exist for specific tasks, such as research or surveillance.

The ministries and other administrative structures for fisheries have been subject to frequent changes, either merging or separating with other administrative structures, or having new units added on. Although the aim is to make divisions of tasks clearer, the result is that it often complicates them, especially as one reorganization follows closely on another. The box below gives the example of a series of administrative changes that have taken place in Ghana over the last five years or so.

#### CHANGES IN THE FISHERIES ADMINISTRATION IN GHANA

*In Ghana the Directorate for Fisheries was merged into the Ministry for Food and Agriculture (MOFA) several years back. At the same time a process of decentralization started (see next section). The fisheries administration thus became part of a wider agricultural unit at the same time as seeing its tasks shifted from general authority in fisheries to technical support to decentralized institutions. This has resulted in staff now being expected to work on agricultural issues as well as fisheries issues. Where they used to work together with other colleagues at the Directorate, they now often find themselves alone in a rural area, without sufficient technical support and financial resources to do their work.*

*But these were not the only changes. A World Bank-Government of Ghana Sub-sector Capacity Building Project started in 1996. This has resulted in the modification of the organizational structure of the Directorate of Fisheries. A Monitoring, Control and Surveillance Unit (MCS Unit) was created in the process. Other administrative changes since then have resulted in the creation of a Fisheries Commission, in parallel to that for forestry and other natural resources. Arbitration Committees have also been created at Regional and National levels. The MCS Unit, the Arbitration Committees and the Fisheries Commission are all responsible for dealing with conflicts in fisheries, but the division of tasks between and mechanisms for collaboration amongst them is not completely clear.*

*Since a Minister of Fisheries was sworn in in February of 2001, it would appear that fisheries is again going to receive special attention, separate from agricultural issues. However, there is no Ministry for Fisheries.*

*At the time of the field visit, the organigram of the fisheries administration was uncertain and in the process of being reviewed.*

In the example given, until the organigram and current structure of the fisheries administration is worked out, communication procedures, responsibilities and so on will remain unclear. Although reorganizations may be necessary, the number and frequency of the changes has complicated the task of fisheries management. The example from Ghana is illustrative of processes going on in all four of the countries studied.

#### 3.1.2 Decentralization<sup>23</sup> and local level fisheries administration

Because decentralization can support the development of local or regional fisheries management mechanisms, it is important to describe the process in some detail here. It should be kept in mind that the decentralization processes in Mauritania, Senegal, Guinea and Ghana have not yet been completed.

<sup>23</sup> See also three SFLP reports (for Ghana and Senegal, and a sub-regional workshop, in 2001) on the impacts on fishing communities of decentralization, as well as other issues related to policies, institutes and processes.

As was mentioned in the example of Ghana, decentralization processes of recent years have caused the functions of the fisheries administration to shift from general authority in fisheries to technical assistance to decentralized institutions. The relationship between central, regional and local levels of government has thus changed. Often, that means that fisheries staff may no longer act independently from staff in other areas. They find they have several "bosses" to answer to: instead of being steered by the Directorate of Fisheries at national level, they now depend upon decisions taken at the lower administrative levels as well as on the advice from the Directorate of Fisheries. Sometimes the messages staffs receive from both parties are not compatible.

The decentralization processes were intended to permit staff at the lower levels more flexibility in planning and carrying out activities with fisher communities. However, sufficient funds and staff at local levels have not accompanied the decentralization of responsibilities. In addition, communications and information is not always passed to the lower levels, as national fisheries administration staff fear loss of influence and decision making power. The other way around, staff at local level is not always clear who to ask for technical support, funds, or permission to undertake an activity. These issues naturally constrain what activities local fisheries staff is able to undertake.

The above issues are complicated even further where local, decentralized staff falls under wider administrative bodies, such as the Ministry of Food and Agriculture in Ghana. There, local level administrations and their staff have to be polyvalent, carrying out tasks including fisheries, animal husbandry, crop production, and forestry. According to those interviewed, this often leads to one or more of these tasks getting less attention than it should, depending on the capabilities, area of expertise and preference of the local head of the administration. Fisheries is typically an area that gets little attention, because few local administrators have a fisheries background and as a result are unfamiliar with the issues involved.

Thus, the decentralization, which through delegating planning and activities to local level could support local and regional fisheries management activities, is in some cases having the effect of reducing support for fisheries management. None of the fisheries administrations appear to have specific extension units that can raise awareness about fisheries management issues or show fishers alternatives for fisheries management. Local staff is not in a position to provide the support or facilitation they would like to communities' organizations and fisheries management initiatives. Local structures with no experience in fisheries management suddenly become responsible for it in their region. This will obviously have to change if responsible fisheries management is to take place.

### **3.1.3 Other agencies involved in fisheries management**

The descriptions above have concentrated on fisheries institutes and their staff. However, it is also common for non-fisheries agencies to be involved in activities related to artisanal fisheries management. For example, the national Navy, the Airforce, Maritime and Port authorities, and sometimes marine park authorities (see case study in Mauritania, Section 4.2.4) may have mandates for safeguarding the national waters, ensuring sea safety, preventing use of gear damaging to the environment, giving out licences, etc..

When conflicts arise over fisheries matters, an even greater number of government agencies generally become involved. Local government authorities, the police, arbitration committees and courts have a part to play in dispute settlement and law

enforcement. To complicate matters, the different institutes may themselves have disagreements about their mandates and roles in fisheries matters.

As will become clear from the case studies later in this report, this multitude of organizations with overlapping mandates or disagreements between them can lead to long procedures or inactivity in the face of an incident. Sometimes corruption results: fishers involved in a dispute may prefer to use 'incentives' rather than to become involved in very long and unclear legal procedures with uncertain outcomes.

As will be seen in the case studies later on, these authorities could have an important function in reducing fishers' vulnerability by regulating fishing activities. In practice, however, the result is that fishers' vulnerability is increased through lack of transparency and inconsistent application of fisheries regulations.

### **3.1.2 Implications for livelihoods-centred fisheries management**

The description in this section shows that there are a number of structures in place and processes going on that could favour decentralized fisheries management. However, there is a clear need for awareness raising about the importance of fisheries management as well as capacity building about the ways in which this could be achieved at the decentralized levels. The Directorates of Fisheries and fisheries projects and programmes can play an important role in this process. The awareness raising and capacity building should target decision-makers and technical staff at local and regional level especially, and involve those national and local staff that already have a fishery background. Bringing together local level and national level staff would have the added advantage that each party better understands the position, role and working conditions of the other, and could create a common understanding of objectives and mechanisms of fisheries management.

Another point that derives from this Section is that livelihoods-centred fisheries management should not only concentrate on the fishers that should be managing their fishing activities, but also on the authorities and processes that are supposed to serve them in this task. In this area, fisheries agencies could identify possibilities for streamlining communication and information for effective fisheries management. This should especially be done on issues where a number of different authorities are responsible, such as enforcement, and where collaboration is essential. For example, the Directorates of Fisheries, in partnership with the relevant agencies, could identify where the constraints lie in coordination on issues like licensing, controlling access, conflict management, and sea safety, and how collaboration could be improved to increase effectiveness.

However, it is also clear that in some cases a change in attitude is needed within the agencies<sup>24</sup>, from central authority on a certain task, to service providers (of the same task) for fishers and other stakeholders. It happens that fisheries staff at national levels feels that decentralization means that power and importance is being taken away from them. But in a decentralized system national-level coordination and support to decentralized levels is an essential task for the system to function. In addition, some of the administrative tasks, which previously burdened the national-level staff, can be carried out by decentralized levels, so facilitating the former's work. The decentralized staff gets the extra administrative work, but should also get more freedom to plan and act locally. Both parties can therefore gain from decentralization. Fisheries agencies could do case studies, support the collection of best practices, and organize workshops on specific issues for fisheries staff to exchange experiences and find ways of further improving their work.

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<sup>24</sup> See also Allison and Ellis, 2001.

## 3.2 What are the existing mechanisms for collaboration?

### 3.2.1 Main points in this section

*Fishers often have an advisory role in formal fisheries management. Their contribution to fisheries management is actually broader, especially in implementation stage, but not always formally recognized.*

- Fisher involvement in formal fisheries management planning is generally restricted to consultation, although there are exceptions.
- Fishers' most active involvement in fisheries management implementation is concentrated at the local level, tends to be informal and consist of conflict resolution.
- Official government laws and programmes increasingly recognize the role of fishers in fisheries management through consultative councils or community-based fisheries management committees.
- There would appear to be more emphasis on fisheries laws and on Monitoring, Control and Surveillance activities than on formulating a coherent set of fisheries objectives, policies, plans, and the implementation and enforcement thereof.

### 3.2.2 Consultation mechanisms for planning or decision making

At the stage of formulation of plans or decision making for fisheries management, fishers' organizations have a consultative role. From the reports on Mauritania, Senegal and Ghana (the situation for Guinea is not described) it is clear that this generally happens through advisory or consultative councils. The example from Mauritania is explained below:

#### CONSULTATIVE BODIES FOR THE FORMULATION OF POLICIES AND REGULATIONS IN MAURITANIA

*In Mauritania, fisher representatives are consulted before decision-making on fisheries matters through the Consultative Council for Marine Fisheries (CCPM) and the National Federation of Fisheries (FNP). The former exists since 1989 and consists of representatives of the administration, professional association, the national research institute and the Parc National du Banc d'Arguin (PNBA) national park (one of the case study areas). The FNP was created in 1995 related to a crisis in the squid fisheries, the most important fisheries in terms of income and employment. The federation has the additional task of making its members aware of new policies and regulations.*

This example shows that the councils also include stakeholders other than fishers. In terms of numbers of fishers in the councils, two examples can be given from Ghana. The Fisheries Advisory Council (FAC), established in 1991, is composed of 20 members of whom 5 represent fishers' interests. The Fisheries Commission, created in 1993, consists of 17 members out of whom 3 represent fishers' interests. Both include representatives of artisanal and industrial fisheries.

Finally, in Senegal, the Fisheries Act of 1998<sup>25</sup> creates the National Advisory Council for Marine Fisheries. It provides for the establishment of consultative councils at the local level. Establishment of Local Councils is currently (July 2001) under process. It is intended that members of local councils for fisheries will include individual artisanal fishers, artisanal fishers associations, fishmongers, fish processors and

<sup>25</sup> Law no. 98-32 of the 14th of April, 1998 of the marine fisheries code

representatives of the local administration. They will advise the Minister responsible for fisheries on all artisanal fishing related matters within their region, ensure that artisanal fishers are informed about conservation and management measures.

The country reports for Mauritania, Senegal and Ghana do not specify what issues these councils deal with: whether it is identifying and agreeing on objectives for fisheries management, formulating management plans, determining appropriate mechanisms, evaluating the possible impact of a measure or on the means of monitoring, control, surveillance or enforcement, or other issues. The creation of local councils for fisheries such as in Senegal is part of the decentralization processes described earlier in this document. However, from the description it would appear that they remain in a consultative and advisory role, and are not expected to go into implementation.

In many instances, a lot of time elapses between the moment a fisheries law or regulation is elaborated and the time it is formally approved and adopted. This may take years. For instance, a new Fisheries Bill in Ghana, which had been prepared 4 years earlier, had not yet been submitted to Parliament for review and approval in June 2001. Even when they are approved, fisheries laws are often not enforced, or not on a regular basis, as will become clear in Sections 3.2.3, 3.2.4 and 4.2.

### **3.2.3 Implementation**

The information from the country reports and visits to the field seem to indicate an emphasis on fisheries laws and regulations, rather than on fisheries plans, fisheries policies, and implementation strategies.

Insofar as plans, policies and implementation strategies are referred to in the reports, they appear not to be based on specific artisanal fisheries or take into account different fisher groups. The only distinction made tends to be between artisanal and industrial fisheries. The country reports also indicate that there would seem to be a tendency for the documents to be formulated around the protection of fish stock, the implementation of Monitoring, Control and Surveillance measures or the development of infrastructure (see the next Section and the case studies, Section 4) rather than on limiting access or other management mechanisms. Livelihood concerns and alternative income sources for those negatively impacted by fisheries management measures do not seem to appear in the documents. If this were true, this would be an important omission when considering fisheries management based on the CCRF or on the SLA.

One of the few official efforts to involve fishers in planning and actual implementation of fisheries management measures (rather than *being consulted* on them) is the joint World Bank – Government of Ghana project called the Fisheries Sub-Sector Capacity Building Project (1996-2001), which has been creating a system of community-based fisheries management. It merits more extensive discussion in this section.

The system of community-based fisheries management, which is based on the concept of the chief fisherman and the council of elders, broadens this concept by attempting to include other stakeholder groups such as fish processors, traders, immigrant groups and poorer members of the fishing community. The functions of the resulting Community Based Fisheries Management Committees (CBFMCs) are to prepare and execute conservation and management measures for fisheries activities. They are intended to regulate the use of fishing gear and access to fisheries in coastal areas adjacent to their communities. Such measures are drafted up in by-

laws and submitted to the local District Assembly for review and adoption. In the Central Region, in particular, a number of such by-laws have already been adopted by District Assemblies and are thus officially recognized. This contributes to the strengthening of local fisheries management systems and measures.

To date, the success of the programme varies. Efforts have concentrated on the Central Region, and this is where most CBFMCs have been formed. The case study community of Mumford has played an important role in promoting and assisting the project through awareness raising in the region and peer learning activities. Staff of the fisheries directorate estimates that some 50% of the CBFMCs in the Central Region function reasonably well. The others are having problems with local power struggles over CBFMCs or chief fishermen who feel that the project might undermine their influence. In the rest of the country, awareness of the objectives of the project is lower. Less effort has been put into the creation of the CBFMCs and District Assemblies are hesitant to pass by-laws whose purpose is not clear to them and which they fear will require inputs they do not have. The project is being considered for extension (another five years), but its dependence on a unique source of financing makes its very existence uncertain and therefore the whole system rather fragile.

There are also a number of legal questions. First, it does not seem that the CBFMCs have been formally established; for example, the Fisheries Bill (not yet passed) does not mention the existence of such bodies. As a result, the functions and constitution of these committees have not yet been formally defined, which, as the case studies will illustrate, creates enforcement problems. Second, the extent of the territorial jurisdiction of the local fisheries bylaws is uncertain. Although they can regulate fishery matters in port, fishers' organization, fish markets, landing sites etc., in principle, the district (and community) jurisdiction does not extend to marine areas. The question is thus: do they have the necessary authority to regulate fishery matters at sea? Third, the legal nature of the decisions made by CBFMCs must be clarified. In practice, it seems that certain decisions made by the CBFMCs are mere recommendations (e.g. proposal of fisheries by-laws), whereas others are binding (e.g. "sentencing" in dispute resolution). Fourth, every by-law passed by a District Assembly must be submitted to the Minister responsible for local government for approval or rejection. In practice, it appears that this procedure is not systematically complied with. It is therefore uncertain whether CBFMC fisheries by-laws are consistent with fisheries (and other) law and regulations. These issues will need to be solved if the CBFMCs are to be sustainable in the long run.

Nevertheless, the use of existing local structures for official fisheries management appears to be unique in marine fisheries management in the four countries<sup>26</sup>. Despite the questions left to solve, many lessons can already be learned from this experience. The Local Councils in Senegal, for example, might be able to benefit from some of the experiences of the CBFMCs.

### **3.2.4 Monitoring, Control, Surveillance**

The apparent emphasis on fisheries laws and regulations, rather than on objectives and policies, has as a consequence that fisheries management in the four countries is concentrated around control and enforcement of fisheries laws, rather than around implementation.

<sup>26</sup> There are other co-management initiatives in other African countries, see for example, Onyango, 2001 for Tanzania, and Hauck and Sowman, 2001, for South Africa.

The task of ensuring compliance with fisheries regulations and laws is usually indicated with the generic term Monitoring, Control and Surveillance (MCS). Marine Research Units often have a monitoring task and are expected to advise the ministry on policies. Special Monitoring, Control and Surveillance (MCS) units<sup>27</sup> have been established in the last decade, which are primarily responsible for carrying out surveillance operations at sea, and sometimes controls on land. Their aim is to ensure that fisheries law and regulations are complied with by fishing vessels operating within the waters under the sovereignty and jurisdiction of the country concerned.

At first, these MCS units were directed exclusively at industrial fishing, but increasingly, the artisanal fisheries are also being included. In these cases, the surveillance aims at keeping industrial vessels out of an inshore zone (defined by law) in which trawling and other industrial fishing is prohibited. The goal of this legislation tends to protect fish resources, but artisanal fishers and even fisheries administrators tend to talk about keeping industrial vessels out of the "artisanal fishing zone". Although MCS is only a part of the fisheries management process, it would appear from the country reports and from interviews that it is often equated with fisheries management.

Even though it is not generally officially promoted or recognized by law, in practice, artisanal fishers' communities are involved in MCS activities. In case study communities such as Kayar (Senegal) and Mumford (Ghana), they assist the local fisheries administration in collecting catch data at landing sites for monitoring purposes. In Mumford and Egyan (also a case study community in Ghana), there is also control on whether the mesh size of nets is conform national and local fisheries regulations. Official MCS units tend to be hesitant to give artisanal fishers more than a role as informant. Nevertheless, in practice artisanal fishers assist local fisheries administrations in conducting surveillance operations within coastal areas through the lending of their boats and reporting of illegal activities.

### 3.2.5 Enforcement and conflict management<sup>28</sup>

In cases of non-compliance with fisheries laws, courts or other agencies can become involved in prosecution and enforcement of sanctions. This aspect, however, tends to be rather weak and is often overlooked in fisheries management in Mauritania, Senegal, Guinea and Ghana. One important area of enforcement of (formal and informal) fisheries regulations is conflict management. Artisanal fishers are often actively involved in this type of enforcement at the local level.

Conflicts occur between artisanal canoes as well as between canoes and industrial vessels. They usually concern accidents at sea, damages of gear, sea safety issues, the use of certain (illegal) gear and incursion of industrial vessels into the "artisanal fishing zone". These are issues that are also addressed in official laws and regulations. However, fishers often try to solve conflicts at the local level first, through traditional systems such as the chief fishermen and the council of elders.

If the dispute cannot be settled at the local level or if the conflict involves injuries or death, the authorities are notified. Then conflict management usually becomes a long and unsatisfying process for artisanal fishers. The process is as follows: once the

<sup>27</sup> In Senegal, there is a separate directorate called the Directorate for the Protection and Surveillance of Fisheries (OOPM). In Guinea-Conakry a similar structure is called the National Centre for Surveillance and Protection (CNSP). In Ghana, the Fisheries Law of 1991 establishes a Monitoring, Control, Surveillance and Enforcement Unit.

<sup>28</sup> For more on conflict management in artisanal fisheries in Ghana and other countries, see Bennet et al., 2000 and Bennett et al., 2001.



accident has been registered and a report made at the local level, it is passed on to the national level, where it is not always clear who has the mandate to settle the conflict or to enforce settlements, so the issue is left unresolved. This is made evident by the example of Guinea in the box below:

#### CONFLICT SETTLEMENT PRACTICES IN GUINEA

*In Guinea, conflict settlement practices are rather confusing, as there are three distinct government agencies which claim responsibility: the DNPM, the national fisheries directorate; The CNSP, the national centre for surveillance and protection of fisheries; the ANAM, the national maritime navigation agency.*

*The DNPM directorate feels it has authority to settle conflicts because it is in charge of managing artisanal and industrial fisheries. The CNSP is of the opinion that conflicts occur because of non-compliance with fishery rules, and the adherence thereto is their responsibility. The ANAM, responsible for safety on maritime and inland waters maintains that conflicts are often caused by accidents and are therefore a safety issue. To complicate the matter, relations between the agencies are often such that it is not likely that one agency will contact another to ask for collaboration on a case. The result is that most cases remain unresolved, there is no settlement and the victim of the conflict remains without compensation. Even where there are settlements, these tend not to be legally binding, so execution of the sanctions is not certain.*

This problem in settling conflicts and the lack of clarity about mandates and responsibilities is a recurring theme in the case studies and during the field visit. It basically translates into the fact that fisheries rules and regulations are not effectively enforced. There is therefore little incentive for stakeholders to comply with them.

In response to this, the artisanal fishers and the fisheries administrations are attempting to set up alternative dispute resolution mechanisms. The box below is again an example from Guinea:

#### ALTERNATIVE CONFLICT RESOLUTION MECHANISMS IN GUINEA

*Parallel to the three settlement options mentioned above, a fishers' association, namely ANOPECHE, has representatives of both artisanal and industrial fisheries. It is therefore in a good position to try and settle conflicts between members of its association. Fishers interviewed preferred this option, as the process of settlement is quicker and more effective than taking a case to the formal agencies or to court. Unfortunately, ANOPECHE can only settle disputes arising between its members, and few industrial vessel owners and captains adhere to the association.*

In Senegal, the Fisheries Act of 1998<sup>29</sup> which creates the Local Councils states that, in addition to consultation on planning, the Local Councils will assist artisanal fishers in organising themselves with a view to reducing conflicts between fishers' communities and various gear type users and to participating in monitoring and control operations (as described in Section 3.2.2).

The box on the Fisheries Administration in Ghana in Section 3.1 already refers to the Arbitration Committees, which involve chief fishermen, members of the fisheries research institute and other stakeholders. Alternatively, those who feel victim of a conflict can turn to the Fisheries Commission or the Director of Fisheries to have their case heard. But the problem of having no legal backing with which to ensure enforcement of sanctions remains the main weakness with all these alternatives.

<sup>29</sup> Law no. 98-32 of 14 April 1998 of the marine fisheries code

This lack of enforcement will have to be tackled by national governments if any fisheries management measures are to be taken seriously by stakeholders. Possibly, the establishment of local fisheries management bodies will draw attention to the matter, and lead to the legal recognition of artisanal fishers' participation in MCS activities thus strengthening their role in coastal fisheries management.

### **3.2.6 Implications for livelihoods-centred fisheries management**

The description in this section indicates that fishers are already involved in formal fisheries management and that this participation is increasing. Fisheries agencies could improve this further by ensuring that the various fisher groups are represented in these official processes. The official recognition of the role already played by fishers in fisheries management is important, so that increasing participation can build on what already exists.

Furthermore, both fishers and government staff at different levels could be made aware of the different types of participation that exist (for example coercing, persuading, informing, consulting, shared decision-making or catalysing group decisions<sup>30</sup>). In this way, they could come to an agreement as to which level of participation is required for a certain process at a certain time. Different and possibly more accessible (or culturally relevant) ways of participating in different activities could also be researched (e.g. via councils, votes, sub-groups, being part of surveillance missions, etc.). Only if directly interested fisher groups can participate at the appropriate level and in the appropriate way for a certain situation, will they be able to propose fisheries management mechanisms that are practicable for their livelihood systems.<sup>31</sup>

For meaningful participation to occur, it is also important that all participating parties have full access to accurate and timely information. Again, the relevant agencies could work with partners on improving information provided from government (all institutes) to fishers and the other way around. Radio programmes, passing information through key persons and organizations such as fisher associations, chief fishermen, local administrators and regular visits by fisheries administrator to the field to talk with fishers are suggestions of way in which this could be done.

Within the process of fisheries management, fisheries agencies should put more emphasis on formulating objectives, policies, implementation and enforcement in a participatory way and with an emphasis on livelihoods aspects. This is likely to make fisheries management more relevant to fisheries' livelihoods and to make it more effective.

<sup>30</sup> Ingles, Musch and Qwisl-Hoffmann, 1999. *The participatory process for supporting collaborative management of natural resources: an overview* FAO, Rome, 1999 84p.

<sup>31</sup> For a discussion of the role of the community and of external agents such as government agencies and projects for resource management in artisanal fisheries, see Degnbol in Tvedten and Hersoug (eds.), 1992

### 3.3 Which rules regulate artisanal fishing?

#### 3.3.1 Main points in this section

Three important constraints in fisheries management consist of: the balancing of livelihoods and biological sustainability objectives; reconciling the objectives and functioning of formal and informal systems; and the limited means for the implementation and enforcement of formal fisheries management regulations.

- Fisheries management rules defined and executed by artisanal fishers have social order and economic livelihood objectives, those defined and executed by government have mostly biological (resource protection) objectives.
- The majority of formal fisheries legislation is currently not enforced; enforcing existing fisheries legislation could have large-scale negative impacts on the livelihoods of an important number of people.
- Different groups of fishers use different systems of fisheries management rules and their enforcement as means through which to achieve or confirm access over livelihood resources.

#### 3.3.2 Informal, local community rules

At the local level, each fishing community or landing site has its own general set of rules and regulations concerning fishing and related activities. Although these differ from community to community, there are certain common trends in a region or country. Common rules at Ghanaian landing sites are:

- payment of a "tax" to the council for the use of the landing site,
- maintaining the beach or landing site clean,
- prohibition of children at the beach during school hours,
- no stealing, fighting, and cursing at the beach or landing site,
- determination of the division of a catch landed by more than one canoe,
- declaration of non-fishing days (in Ghana, usually Tuesdays),
- prohibition of destructive gears such as small mesh-sized nets and dynamite,
- the chief fisherman is responsible for organising search and rescue missions.

In addition, the "Konkohene" - the organization of women fish traders in a community - has rules about price setting and comportment at the beach. Their leader settles disputes in fish trade, represents women in daily price negotiations for fish, oversees occasional cleaning of landing sites and generally ensures some degree of orderliness.

In case of non-compliance or conflicts on land or at sea, the chief fisherman and the council of elders or the women's organization settle the dispute. Sanctions include fines and, in the worst cases, confiscation of gear, grounding of canoes or barring perpetrators from the use of the local landing site (for both traders and fishers). Where conflicts include persons from different communities, settlement is done in the community where the conflict took place, in the presence of the chief fisherman of this community and the chief fisherman of the community of origin of the accused fisher.

In Senegal, basic rules tend, rather, to occur *within fisheries groups* active at the landing site. Examples are the *Comité de Pêche* and the *Commission de Surveillance* at Kayar which will be discussed in the case studies. Such rules consist of:

- limitation on the quantity of certain species fish that can be landed by a specific user group (handline fishers),
- limitation on the number of fishing trips per 24 hours (purse seine fishers),
- mutual control of the presence of sea safety equipment on board,
- prohibition of fishing at night.

The difference between the two types of measures (community or landing site level, and within a group) is clear: the group rules are much more specific (because aimed at one type of fisheries) than the general community ones. Group rules, as will be seen later, are for the most part economically motivated, whereas community rules mainly cover issues of social order. At most, general community rules reinforce national rules on prohibited gear.

Local group rules limiting access to resources, as above, or to fishing grounds are rare (although the case study in Egyan is an exception). This could be because of the perception of the sea as being "for everyone", because they make little sense unless neighbouring communities apply the same rules, or simply because access rules are difficult to enforce at the local level.

At the national level, only one example was encountered of fisheries associations implementing a fisheries management rule. Ghanalan National Canoe Fishermen's Council has achieved an important reduction in the use of dynamite and poisons in fishing, by having all fishers take an oath to stop these practices. The Council has a certain power to enforce such a rule, because it is the sole distributor of government subsidized pre-mix fuel to fishers; any one who breaks the rule will no longer be provided with fuel.

### **3.3.3 Formal, national regulations**

At the time of the research for the country reports, there were, in practice, no fishery management plans in effect in Ghana and Senegal, which managed fish stocks or controlled fishing effort. The situation is not specified in the reports for Mauritania and Guinea. Nevertheless, legal documents in both Ghana and Senegal specify that fishery management plans should be made, and lay down the procedure that should be followed. In Senegal, the Fisheries Act, 1998, requires that fisheries management plans be established and periodically reviewed so as to make necessary adjustments. In Ghana, a management plan was prepared in the framework of the World Bank funded Fisheries Sub-Sector Capacity Building Project. At the time of the field visit (June 2001), the plan was in a draft form<sup>32</sup>.

Although Senegal does not have a plan managing specific fish stock and fishing effort, it does have a National Plan for Marine Fisheries (NPMF, 1998). The establishment in Senegal of the consultation mechanisms mentioned earlier (the National Advisory Council for Marine Fisheries and the Local Advisory Councils for Marine Fisheries) are part of this effort. Another activity is to improve the surveillance and enforcement system. With regard to the artisanal fishing sector, specific measures aimed at developing landing site infrastructures, notably in Fass Boye and

<sup>32</sup> As the draft fishery resources management plan was not made available to the mission, it was impossible to determine whether it includes specific measures directed at artisanal fishing activities.

Kayar, have been planned. This is all part of the first phase of the NPMF. The second phase foresees the deployment of new assets for surveillance, the implementation of a satellite based vessel-monitoring system and the reduction of the fishing effort exerted by artisanal fishing vessels<sup>33</sup>. The NPMF was still in the process of being carried out in June 2001.

Apart from the FSCBP and the NPMF, Ghana and Senegal have a number of rules and management regulations that are applicable to fisheries. They define:

- what falls under artisanal or other types of fishing;
- the regime of access to fisheries;
- conservation and management measures;
- conflict settlement.

The first regulation classifies fishing vessels into different categories, enabling policy makers to subject each category of vessel to distinct legal regimes, in particular with respect to access to fisheries. In Senegal, the definition of an artisanal vessel is quite specific (see example below). In Ghana, this is less so, and more confusion is likely to arise over which law is applicable to which vessel.

#### DEFINITION OF ARTISANAL FISHING VESSELS, THE EXAMPLE OF SENEGAL

*In Senegal, Decree n° 98-498 of 10 June 1998 provides a clear definition of "artisanal fishing vessel" based on three distinct criteria, namely structure of the vessel, type of fishing gear used on board and means of conservation of the catch. Hence, any vessel with no deck, equipped with manually operated fishing gear and using ice or salt as sole means of catch conservation qualifies as an artisanal fishing vessel.*

*Conversely, all other fishing vessels not satisfying these criteria are regarded as industrial fishing vessels. In case of doubt the Minister responsible for marine fisheries can decide, whenever necessary, whether a vessel should qualify as an artisanal or industrial fishing vessel.*

The second group of regulations, defining the regime of access to fisheries, includes licensing systems, marking of a vessel, and sea safety standards. At present artisanal canoes are not licensed nor made to comply with any safety standards. In Ghana this is a requirement by law (of 1991), but it has not been carried out. If the new Fisheries Bill is passed, District Assemblies will get the task of registering canoes operating in their area. This may become quite a complicated task, as fishers migrate all along the national coast and even further, suggesting that one single vessel would have to be registered several times. It will require time and capacity building at district level to carry this task out. In Senegal, meanwhile, subjecting artisanal fishing to an authorisation system is an issue of heated debate. Fishers fear that such a system would serve to tax them, and therefore oppose any licensing or similar measure. They also fear that their numbers will be reduced for fisheries management objectives. And there are in fact provisions for reductions in artisanal vessels in fisheries management plans. Already, a vessel may be prohibited from fishing in Senegalese waters if certain sea safety and marking criteria are not met.

The third group of measures mentioned were conservation and management measures. These regulate the use and characteristics of fishing gear, the marking of gear for visibility, and define fishing zones. Concerning gear, the types and mesh sizes of nets are generally specified, explosives and poisons for fishing purposes are prohibited, and catching juvenile or undersized fish is not allowed. For safety reasons, submerged stationary gear and surface-drifting gear should be clearly

<sup>33</sup> In Senegal, it is estimated that artisanal fishing contributes to more than 70% of the total annual production.

marked, and have lighted markers at night. Finally, national fisheries legislation defines one or more fishing zones, in which certain gear or vessels are not allowed to fish or only at certain times of the year. The most important for this study is the so-called "artisanal fishing zone", where trawling is prohibited. Although it has usually been established to protect juvenile fish and prevent the environmentally damaging effect of trawlers, artisanal fishers see it as "their zone". In Senegal the zone goes from the coast 6 (in some places 7) nautical miles out to sea. In Ghana it goes down to the 30m-depth line, and therefore varies in distance from shore depending on the area of the country.

Finally, there are regulations with regard to conflict settlement. Although there are formal mechanisms for this which seem quite satisfactory in theory, in practice they have not been effective. In Senegal, the new local artisanal fishing councils should strengthen local fishers' organizations in order to diminish and solve conflicts between fishers' communities and fishers using different types of gear. A consultative commission for fisheries violations was created to counsel the Minister responsible for marine fisheries on compounding issues, but the issue of conflict resolution to settle disputes arising between artisanal and industrial fishers has not been directly addressed. In Ghana, it was already said that the Fisheries Commission has the authority to hear and settle complaints from persons aggrieved in respect of matters arising from or related to fishing activities and the fishing industry generally. In such a case, the Fisheries Commission appoints a Fisheries Settlement Committee. The still unapproved Fisheries Bill states that any person aboard a motor fishing vessel that destroys or damages any appropriately marked fishing gear used for artisanal fishing inside the Internal Economic Zone commits an offence. Such a person is liable, on conviction, to a fine while the master of the vessel having committed the offence is responsible for providing (a) full compensation for the destroyed gear either in kind or cash; and (b) adequate compensation for lost fishing time to the aggrieved artisanal fishers. However, the nature of the decisions made by this Committee are not specified and thus it is not clear whether such decisions are binding on the parties. The problems of lack of enforcement mentioned earlier under Monitoring, Control, Surveillance and enforcement are thus likely to continue.

### 3.3.4 Application of formal rules and regulations

Conservation and management issues are often socially and politically sensitive. Resource conservation and stock management objectives of the fisheries management plans become a point of negotiation when applied in the social, economic and political reality of artisanal fisheries. The box below gives the example of problems that staff in the fisheries administration predict with relation to application of formally permitted mesh sizes for nets.

#### THE SOCIAL CONSEQUENCES OF IMPLEMENTING LAWS ON MESH SIZES OF NETS

*In Ghana the use of mesh sizes less than 25 mm in stretch diagonal length is strictly prohibited. Artisanal fishers have rejected this measure arguing that it does not allow them to catch mature anchovies, which is a legal activity. Most beach seiners have smaller mesh sizes and thousands of fishers and families depend upon beach seining for an income<sup>34</sup>. At the same time, inland fishers complain that the official mesh size would make fishing on the Volta Lake impossible, as the fish species on the lake are smaller than on the coast. The measure would also affect a large number of people fishing on the lake. Therefore, enforcing the mesh size is socially and politically unacceptable, and it is not surprising that it has not been enforced with great rigour since the adoption of the law in 1991.*

<sup>34</sup> The SFLP has conducted studies on beach seining in Ghana and elsewhere, see SFLP, 2001.

Similar processes occur for the marking of fishing gear. Artisanal fishers say that adequate marking materials are either unavailable or exceedingly expensive. They tend to mark passive gear with strips of cloth. Industrial captains complain that these are not visible from afar, and certainly not at night, leading to their damaging the artisanal fishing gears. This in turn leads to conflicts between the two parties.

The situation is similar for the "artisanal fishing zone". This zone is not marked, so arguments tend to arise over whether an industrial vessel intruded into the zone or not. A lot of incursions occur at night, when it is difficult to identify the vessels. Artisanal fishers argue that trawlers have so over-fished or damaged the "artisanal fishing zone", that there is no fish left for them. Their suggested solution is to extend the zone further out to sea. But it is also true that artisanal fishers themselves have over-fished inshore stocks, and they are fishing further out at sea. There, industrial vessel owners say, artisanal fishers cause accidents, because they do not comply with the regulations on navigation, sea safety standards, and marking of vessels and gear. In fact, of course, the whole discussion is not so much about the rules and regulations as such (the actual enforcement of it is generally weak or non-existent anyway) but rather on rights to resources and fishing grounds between different fisheries.

### **3.3.5 Implications for livelihoods-centred fisheries management**

This section shows that fisheries management rules and regulations have either social and economic (livelihoods) objectives, or biological objectives. The informal community organizations tend to have social and economic objectives, whereas the government fisheries agencies tend to concentrate on biological objectives<sup>30</sup>. There does not seem to be a process of identifying the variety of objectives that fisheries management has, and then a process of prioritisation or balancing of these objectives. The fisheries agencies could work on constructing a process by which this would be done.

It would also seem that there is no system for evaluating or adjusting the effects of aiming for or achieving a certain set of objectives. To name one particular case, in the example from Ghana, there seems to have been little or no consideration for the effects of the application of the law on minimum mesh sizes for nets on the livelihoods of fishers. The fisheries agencies should identify, together with fishers, what the different objectives of fisheries management are and how they could be combined so as to achieve both sustainability and livelihood objectives. In cases where this is not possible, alternative livelihood options should be sought.

It is also clear from the Section that official fishery regulations have little effect if they cannot be enforced. This shows that, when identifying alternative mechanisms of fisheries management, it is important to evaluate how the enforcement will take place, and how costly and effective the enforcement can be made to be. Here, collaboration with existing fishers' organizations could be important. This does mean that, for fisher organizations to collaborate in enforcement, the regulation has to have a direct interest for them and achieve livelihood objectives, as the local community rules have.

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<sup>30</sup> See also Degnbol in Tvedten and Hersoug (eds.), 1992

## 4 THE CASE STUDIES ON ARTISANAL FISHERIES MANAGEMENT MECHANISMS

### 4.1 Introduction to the case studies

#### 4.1.1 Main points in this section

*Fisheries and livelihoods activities vary greatly, depending greatly on local context.*

- Fisher communities vary greatly in livelihood possibilities and constraints, as presented by the availability of infrastructure, accessibility, primary economic activity, population structure and so on.
- The case studies on artisanal fisheries management mechanisms concentrate on two types of activities: control at landing sites and surveillance at sea.

#### 4.1.2 The communities and the case studies per community

From the country reports on fisher participation on MCS in Mauritania, Senegal and Guinea, ten case studies were taken for analysis in the present study. The case studies on artisanal fisheries management took place in eight communities. The communities, per country are:

THE EIGHT CASE STUDY COMMUNITIES, PER COUNTRY

| Country    | Community  |
|------------|--|
| Mauritania | Camps in the Parc National du Banc d'Arguin (PNBA) |
| Guinea     | Bonfi and Koukoudé                                 |
| Ghana      | Tema   |
|            | Mumford  |
|            | Egyan  |
| Senegal    | Kayar  |
|            | Fass Boye  |

The number of case studies per community varies. There is one for the PNBA in Mauritania, one for the two communities in Guinea, one case each in three communities in Ghana, and five case studies in the two Senegalese communities. To clarify the situation, the table below shows an overview of the case studies in the respective communities.

THE CASE STUDIES PER COMMUNITY

| Country    | Community         | Name of the case study  |
|------------|-------------------|---|
| Mauritania | Camps in the PNBA | The <i>Système de Surveillance du PNBA</i>                                |
| Guinea     | Bonfi, Koukoudé   | The <i>Surveillance Project</i>   |
| Ghana      | Tema              | The <i>Sub-Committee for Surveillance</i>                                 |
|            | Mumford           | The <i>Chief Fisherman and the Council of Elders</i>                      |
|            | Egyan             | The <i>Community fisheries management committee</i>                       |
| Senegal    | Kayar             | The <i>Commission de Surveillance</i>                                     |
|            |                   | The <i>Commission des sennes tournantes</i>                               |
|            |                   | The <i>Comité de Pêche</i>  |
|            | Fass Boye         | The <i>Comité de Vigilance et de Sécurité</i>                             |
|            |                   | The <i>Projet Protection et Surveillance des Pêches au Sénégal (PSPS)</i> |



On the following pages, maps illustrate roughly where the communities are located. In a text-box next to the maps, some livelihood characteristics of each community are described, and the name of the case that goes with each community is given. (The source of the maps is the following web-site: [http://www.lib.utexas.edu/Libs/PCL/Map\\_collection/Map\\_collection.html](http://www.lib.utexas.edu/Libs/PCL/Map_collection/Map_collection.html).)

#### INDICATION OF THE LOCATION OF THE CASE STUDY AREA IN MAURITANIA

| PARC NATIONAL DU BANC D'ARGUIN   |
|--|
| <ul style="list-style-type: none"> <li>Système de Surveillance du Parc National du Banc d'Arguin (PNBA)</li> </ul>   |
| <p>Protected wetlands area to the south east of Nouadhibou. Isolated with no infrastructure. No motorized fishing vessels allowed. Communities consist of a few family camps. Fishing involves migration to regions outside the park. Few other income earning activities.</p> |



#### INDICATION OF THE LOCATION OF THE CASE STUDY AREAS IN SENEGAL

| KAYAR  |
|--|
| <ul style="list-style-type: none"> <li>Commission de Surveillance</li> <li>Commission des sennes tournantes</li> <li>Comité de Pêche</li> </ul>  |
| <p>Rural agricultural and fishing community on the Grande Côte north of the capital Dakar. Rapid development after road construction in 1940's. Economic activity still attracts people from inland. Large group of immigrant fishers from St. Louis. History of conflicts between resident and migrant fishers. Seasonal migration.</p> |
| FASS BOYE  |
| <ul style="list-style-type: none"> <li>Comité de Vigilance &amp; Sécurité</li> <li>Projet Protection et Surveillance des Pêches au Sénégal (PSPS)</li> </ul>   |
| <p>Agricultural and commercial community, important fishing centre on the Petite Côte south of Dakar. Lack of basic infrastructure, distant markets and bad links to them. Since 1960's, fishing of increasing importance due to influence of migrants from St. Louis. Local fishers migrate elsewhere.</p>                              |



# INDICATION OF THE LOCATION OF THE CASE STUDY AREAS IN GUINEA

| BONFI   |
|---|
| <ul style="list-style-type: none"> <li><i>the Surveillance Project</i></li> </ul> <p>Important fishing community in rural zone, about 200 km from the capital Conakry. Distance from markets for inputs cause constraints. Some basic infrastructure is available.</p>  |
| KOUKOUDE  |
| <ul style="list-style-type: none"> <li><i>the Surveillance Project (as in Bonfi)</i></li> </ul> <p>One of most important ports in the capital Conakry. Economic activities: commerce, transportation and fishing. Availability of variety of infrastructure. Easy access to distribution and transport for internal and export markets. Fishers migrate seasonally.</p> |



# INDICATION OF THE LOCATION OF THE CASE STUDY AREAS IN GHANA



| EGYAN   | MUMFORD   | TEMA   |
|---|---|--|
| <ul style="list-style-type: none"> <li><i>Community fisheries management committee</i></li> </ul> <p>Small rural community near the Côte d'Ivoire border, distant from basic infrastructures, roads in bad conditions. Main occupations are farming and fishing. Conflicts with communities further down the coast fishing in their area.</p> | <ul style="list-style-type: none"> <li><i>Chief Fisherman and the Council of Elders</i></li> </ul> <p>Large fishing community for artisanal and inshore fisheries, about two hours' drive from the capital Accra. Basic infrastructure available. Seasonal migration.</p> | <ul style="list-style-type: none"> <li><i>Sub-Committee for Surveillance</i></li> </ul> <p>Industrial town, an hour from Accra. Important merchant, industrial and artisanal fishing port near the capital Accra. Various types of infrastructure exist both for basic needs and fishing. Seasonal migration to and from Tema for fishing.</p> |

#### 4.1.3 Division of case studies into two groups for analysis

For the sake of analysis, the case studies were divided into two main groups, according to whether the fisheries management activity was carried out at sea and aimed at protecting intrusion of foreign vessels in an area, or at the landing site to control fish landings:

1. **Surveillance at sea:** concern patrol activities at sea to ensure that certain vessels do not enter into a particular zone.
2. **Control at landing sites:** these cover a range of activities, such as the amount of fish that can be caught and the type of gear that can be used, but the control activity all take place at the beach, port or landing site.

The table below shows into which group each of the case studies falls.

GROUPING THE CASE STUDIES INTO "SURVEILLANCE AT SEA" AND "CONTROLS AT LANDING SITES"

| Country    | Community       | Name of the case study  | Surveillance at sea | Control at landing sites |
|------------|-----------------|---|---------------------|--------------------------|
| Mauritania | Camps           | The <i>Système de Surveillance du PNBA</i>                                | X                   |                          |
| Guinea     | Bonfi, Koukoudé | The <i>Surveillance Project</i>   | X                   |                          |
| Ghana      | Tema            | The <i>Sub-Committee for Surveillance</i>                                 | X                   |                          |
|            | Mumford         | The <i>Chief Fisherman and the Council of Elders</i>                      |                     | X                        |
|            | Egyan           | The <i>Community fisheries management committee</i>                       |                     | X                        |
| Senegal    | Kayar           | The <i>Commission de Surveillance</i>                                     | X                   |                          |
|            |                 | The <i>Commission des sennes tournantes</i>                               |                     | X                        |
|            |                 | The <i>Comité de Pêche</i>  |                     | X                        |
|            | Fass Boye       | The <i>Comité de Vigilance et de Sécurité</i>                             | X                   |                          |
|            |                 | The <i>Projet Protection et Surveillance des Pêches au Sénégal (PSPS)</i> | X                   |                          |

#### 4.1.4 Implications for livelihoods-centred fisheries management

Although this section simply introduces the case studies, the description above does underline that artisanal fisheries take place in communities and contexts that vary enormously in terms of livelihoods, the assets available, the fisheries, the livelihood strategies etc. It reinforces the point that fisheries management needs to be adapted to the context and flexible. This is not just in order to be adapted to the livelihoods, but also for the purely practical reason that the context creates possibilities and constraints on how participation, implementation, MCS and enforcement of fisheries management are able to take place. The challenge is therefore to create a basic management framework that sets the general objectives of fisheries management, while leaving room for local adaptation. Creating such a framework is most likely done through trial and error and learning from experiences elsewhere. Countries could identify experts that could help with this process.

## 4.2 Description of the case studies

### 4.2.1 Main points in this section

Both formal (government) and informal (local fisher group) management mechanisms exist, with as a main difference the scale, the objective and the equipment used.

- Controls at landing sites tend to be at the initiative of artisanal fisher committees whereas surveillance at sea is mostly initiated by government.
- Differences between community and government mechanisms concern mostly their scale and equipment used.
- Controls at landing sites by fisher groups are more effective than surveillance at sea by either government or fisher groups.
- A satisfactory level of effectiveness is more important than 100% effectiveness.

### 4.2.2 Origin and objectives of the controls at landing sites

Four of the case studies concern controls at landing sites, all of them by fisher committees. They are almost entirely initiated and executed by fishers. The committees have agreed upon rules for:

- restricting the number of fishing trips (*Commission des sennes tournantes*, Kayar),
- the amount of fish landed on certain days (*Comité de Pêche*, Kayar) or
- the inspection of mesh sizes of nets and checks on other informal regulations (*Chief Fisherman and the Council of Elders*, Mumford; *Community Fisheries Management Committee*, Egyan).

The origins and objectives of the case studies on controls at landing sites vary.



In Senegal, both of the case studies on controls at landing sites – the *Commission des sennes tournantes* and the *Comité de Pêche* – were situated in Kayar (see map for a reminder). The *Commission des sennes tournantes* was put in place by fishers in the early 1990's to improve the price purse seine fishers were getting for small pelagics. Also in Kayar, the *Comité de Pêche*, created in 1994, has the aim of regulating the offer of demersal species destined for export to get a better price. It concerns handline fishers. Both have objectives of improved marketing.

In Ghana, the cases on control at landing sites consist of the *Chief Fisherman and the Council of Elders* in Mumford and the *Community fisheries management committee* in Egyan (see map for a reminder of their location). In contrast to the situation in Kayar, Senegal, the Ghanaian cases on controls at landing sites were initially set up to regulate social issues, such as conflict management. Gear control activities for protection of fish resources were later added to the initial objective.



The new objective of the committees in Mumford and Egyan originated at the end of the 1990's under influence of the Sub-sector Capacity Building Project which introduced community-based fisheries management committees in Ghana (see also Section 3.2.3). Since then, in Mumford, the nets and documents of local fishers and seasonal migrant are inspected on fishing with nets of small mesh sizes and landing of juvenile fish. In Egyan this regulation is combined with an area near the shore, restricted to fishing for elderly fishermen so that they can ensure a minimum level of income.

#### 4.2.3 Origin and objectives of surveillance at sea

There are six case studies for surveillance at sea.

Three of these case studies consist of fisher committees or sub-committees that carry out surveillance activities. The other three cases on surveillance at sea consist of decentralized government surveillance posts with respective staff.



Of the fisher committees and sub-committees, the *Sub-Committee for Surveillance* took place in Tema, Ghana.

The *Comité de Vigilance et de Sécurité* took place in Fass Boye and the *Commission de Surveillance* in Kayar, Senegal (also the site of case studies on controls at landing sites and the decentralized government surveillance posts).

Of these three surveillance committees, only the *Comité de Vigilance et de Sécurité* in the community of Fass Boye, Senegal, was initiated by fishers. The other two, the *Commission de Surveillance* in Kayar (Senegal) and the *Sub-Committee for Surveillance* in Tema (Ghana) are executed by fishers but were initiated at the encouragement of the fisheries administration.



The other three cases on surveillance at sea consist of decentralized government surveillance posts with respective staff. These cases concern the *Projet de Protection et Surveillance des Pêches au Sénégal (PSPS)* in Fass Boye; the *Système de Surveillance du PNBA*, in the PNBA Park in Mauritania (see map left); and the *Surveillance Project* in the communities of Bonfi and Koukoudé in Guinea.



The objective of most of the case studies on surveillance is to ensure that no trawling takes place in the near-shore zone where this is prohibited, often translated as being an "artisanal fishing zone". This zone varies per country, but is generally several miles out to sea from shore. It is based on regulations for stock protection (see also Section 3.3.3). As was mentioned before, artisanal fishing is concentrated in this area, and the surveillance activity is generally perceived to have as its objective to keep industrial vessels out of the "artisanal fishing zone".

The *Système de Surveillance du PNBA* (Mauritania) differs slightly in objective from the other cases in that the underlying interest of keeping industrial vessels out of the park is the conservation of resources and the park itself. Within the park, there is a prohibition on the use of outboard engines and access to the park is limited to necessary travel and regulated tourist visits.

The objective in the case study called the *Commission de Surveillance of Kayar* (in Senegal) is also different from the other case studies. Its objective was to ensure that gill nets (used by migrants) were not used in a newly defined zone destined for line fishing (practised by Kayar fishers). These two zones were defined *within* the "artisanal fishing zone".

The *Comité de Vigilance et de Sécurité* (in Fass Boye, Senegal) and the *Commission de Surveillance* (in Kayar, Senegal) were initiated in the 1980's. The other cases on surveillance date from the 1990's.

#### **4.2.4 Organization and functioning**

For controls at landing sites, the fisheries management mechanism was aimed at different groups in the different case studies. In Kayar (Senegal), the rules for controls at landing sites of the *Comité de Pêche* and the *Commission des sennes tournantes* apply specifically to its own members, that is handliners and purse seiners respectively. In the two Ghanaian communities of Egyan and Mumford the rules set by the *Chief Fisherman and the Council of Elders* (Mumford) and the *Community fisheries management committee* (Egyan) apply to all fishers active in those communities' waters. Egyan has made its rules known to all other fishing communities and local authorities in the district, which agreed to comply with the rules when fishing at Egyan. In Mumford the rules are made clear to migrant fishers when they announce their arrival at the landing site to the *Chief Fisherman and the Council of Elders*.

For the majority of the case on surveillance at sea, the rules on respecting the so-called "artisanal fishing zone" or the marine park (in the case of the PNBA in Mauritania) have been laid down by national government in legislation and apply especially to industrial vessels. Artisanal vessels are not restricted in where they fish. The sole exception to this is the *Commission de Surveillance* of Kayar (in Senegal), where the zones for gill nets (used by migrants) and the zone for line fishing (practised by Kayar fishers) were defined by local authorities and fisher leaders, in order to end a conflict between the two groups of fishers.

The cases show that control of compliance at the landing site is very simple and requires no specific equipment. Each committee generally has sub-group, which deal with this specific task. For example, at the landing site in Mumford (Ghana), so-called "security personnel" are hired by the *Chief Fisherman and the Council of Elders* to ensure orderly conduct and compliance. This is done with money from fines and landing site "taxes" for the use of the landing site paid to the council. In addition, a

general form of control is usually carried out by the community at large, by the simple fact that everyone is present on the beach when catches are landed and can see who does what. Sometimes geo-morphological aspects of a region facilitate the control, as in Kayar (Senegal). The area around that community does not permit the landing of canoes and unloading of fish, forcing all fishers to land their catch at Kayar where they can be seen and controlled.

(Sub-)committee members carry out sanctions against those who do not comply with the landing site rules. They consist, amongst other things, of fines, confiscation of landed juvenile fish, and in the case of continued disobedience, stopping canoes from going fishing, confiscation nets or prohibition to fish in that community's area. But social sanctions are also important, such as acquiring a reputation as a rule-breaker or losing credibility as a community leader. The income from fines in the systems goes to finance the control persons, other committee activities, or community development initiatives.

Surveillance at sea requires more inputs than controls at landing sites. In the committees for surveillance, committee members make canoes and outboard engines available for patrols. The committees then carry out patrols on a regular basis and on the basis of specific information on intrusions. The information is reported to the committee, who often calls a meeting, hears the case and tries to settle it via payment of fines at the community level. The running costs of the committees often come from the money gathered from fines. An exception to this procedure is the *Sub-Committee for Surveillance* in Tema (Ghana), which reports intruding industrial vessels to the fisheries authorities. The MCS Unit of the Directorate of Fisheries should then take action.

The decentralized government surveillance posts have more and more sophisticated equipment than the committees: VHF portable radios, Geographical Positioning System (GPS), compasses, cameras, maritime maps, etc. Generally, they possess one or more small vessels with outboard engines. In the Guinean case (*Surveillance Project*, Bonfi and Koukoudé) and the *PSPS* (Fass Boye, Senegal) case, Navy vessels are used, while the *Système de Surveillance du PNBA* (PNBA, Mauritania) has a small plane at its disposal for surveillance. The posts schedule patrols, generally on a monthly basis. These are based on national surveillance plans, information about local fishing practices, and experience of where incursions are likely to take place. The plans are elaborated by staff of the surveillance post, often in collaboration with other relevant authorities, such as the Navy (who may send a security officer). Patrols also go out to follow-up on specific information from fishers, observers aboard industrial vessels, or radar. During patrols, more specific information or evidence is gathered, which may involve boarding and inspection of the industrial vessel. The information is either passed on to the relevant authorities verbally or in a written report for arrests, prosecution and fines. Each post also makes monthly reports. Financing comes from part of the fines and from government.

#### **4.2.5 Results and effectiveness**

What were the results of the cases studied? What is the actual state of the committees and to what extent have they reached their objectives? To start once more with the controls at the landing site, for these case studies the picture is relatively positive. The *Commission des sennes tournantes* (Kayar, Senegal) which aims to increase prices for small pelagics appears to be functioning quite well, although prices still vary somewhat. In the same community, the objectives of the *Comité de Pêche* (aim: to increase the price for exported demersals) are generally,

but not always, reached. In Ghana, Mumford's *Chief Fisherman and the Council of Elders* seems to be working rather well in preventing the use of undersized mesh nets in the community's waters. However, a big problem exists in Egyan (also Ghana), where the *Community Fisheries Management Committee* cannot restrain migrant fishers from the community of Princetown further along the coast from fishing with undersized mesh nets in their area. There is an ongoing conflict over this issue, which outside mediation has not been able to resolve.

For the case studies on surveillance the results are much less positive. To start with the fisher committees doing surveillance, the *Commission de Surveillance* of Kayar (Senegal) has stopped surveillance activities due to lack of means while the problem remains: conflicts between migrants with gill nets and residents with hand lines continue. The case study at Tema, the *Sub-Committee for Surveillance* (in Ghana) was set up only three years ago, but already it has known decreasing attendance at its meetings. This began when relatives of sub-committee members were caught breaking the rules that the sub-committee is supposed to check on. Sub-committee members hesitate to apply the rules to their friends and relatives. The *Comité de Vigilance et de Sécurité* of Fass Boye (Senegal) was initially effective in achieving its objective of keeping industrial vessels out of the "artisanal fishing zone". However, the methods used were so radical that industrial vessel owners went to the formal courts to complain about the committee's harassment. As a result, its activities were declared illegal and stopped by the government. The process did, however, lead to the installation of the decentralized *PSPS* post in Fass Boye in 1992.

The effectiveness of such government controlled surveillance activities has, according to the case studies, also been low. The *PSPS* decentralized surveillance post just mentioned in Fass Boye (Senegal) is no longer functional due to operational problems. Still faced with incursions by industrial vessels in the coastal zone, some fishers in Fass Boye would now like to bring the *Comité de Vigilance et de Sécurité* back to life. The *Surveillance Project* in Bonfi and Koukoudé (Guinea) was turned into a government programme after 1996. Although it is still in place, it is generally considered by both government officials and fishers to be ineffective. The most recent surveillance post implemented was the one in the *PNBA* in Mauritania (1998). It is not clear from the report whether it is successfully deterring vessels from entering the park or fishing illegally.

If effectiveness is taken to mean the extent to which the objectives were reached (keeping industrial vessels out of the coastal zone, fishing with certain gear only in a certain area, limited access to the park, etc.), none of the fisheries management measures of the case studies can be considered one hundred per cent effective. However, it would seem that three of the case studies on controls at landing sites are satisfactory enough to stay in place. In contrast, the group of case studies on surveillance at sea has so many problems that they do not appear to be satisfactory enough and surveillance issues continue to be an issue of heated debate in the communities concerned.

#### **4.2.6 Implications for livelihoods-centred fisheries management**

As with the last section, this section is mainly an introduction to the case studies. However, it does show that both fishers and government are actively involved in fisheries management. Most of the time, fishers are very motivated to apply fisheries management mechanisms that are likely to directly improve their livelihoods. Once again, by collaborating with fishers, governments could improve the implementation of their fisheries management mechanisms, and vice versa. Fisheries project and



programmes could encourage this collaboration by organising exchange visits between fisher committees and between fishers and government officials in order to raise awareness about the possibilities.

The information from the case studies also shows, however, that some fisheries management mechanisms are more complicated to carry out than others. Surveillance is clearly much more difficult to carry out than controls at landing sites. Yet it is an essential part of fisheries management if the laws on different zones or protected areas are to be respected. The next Section analyses the strengths and weaknesses of the case studies on surveillance and on controls at landing sites.

## 5 ANALYSIS OF THE CASE STUDIES

### 5.1 Strengths and constraints

#### 5.1.1 Main points in this section

*Effectiveness of a measure depends on the benefits of compliance in comparison with the risks involved in non-compliance, as well as the interest and commitment that the implementers have in the fisheries management mechanism.*

- Three elements act as a deterrent to potential transgressors:
  - a high enough sanction on breaking the rules,
  - a high enough probability of being caught, and
  - a high enough chance of the sanction being applied.
- The enforcers need to have a vested interest in upholding the fisheries management measures, otherwise illegal incentives and corruption will undermine the measure.
- Homogenous, easily distinctive and small groups of fishers tend to be more effective in applying local rules and regulations to themselves than general rules covering a variety of fisher groups, applied by non-fishers.

#### 5.1.2 The cases on controls at landing sites

The analysis of the four cases on control at the landing site (see table below) reveals that their main strength is the relatively high probability of being caught when cheating. In addition, the country reports repeatedly mention the fact that the negative social consequences of cheating tended to be highly deterrent.

THE CASES ON CONTROLS AT LANDING SITES

| Country | Community | Name of the case study                               |
|---------|-----------|--|
| Ghana   | Mumford   | <i>The Chief Fisherman and the Council of Elders</i> |
|         | Egyan     | <i>The Community fisheries management committee</i>  |
| Senegal | Kayar     | <i>The Commission des sennes tournantes</i>          |
|         |           | <i>The Comité de Pêche</i>                           |

The cases on control at landing sites seemed to work best where there was a direct interest and therefore a commitment by committee members. More specifically this was the case when there were direct economic benefits to be had for those in the committee. The restriction on landings small pelagics by the *Commission des sennes tournantes* and of demersals for export by the *Comité de Pêche* (both in Kayar, Senegal) increased price for fish landed and increased income for boat owners.

Interestingly, the field visit and some extra interviews in Senegal revealed that the limitation of catch landed (as in the *Comité de Pêche* and the *Commission des sennes tournantes*) was tried in a number of other communities for various fisheries in Senegal. It did not, however, work everywhere. It was a failure for the squid fisheries in the intensely fished Petit Côte region. Local fishers feel this is because of the presence of too many different fisher groups in their community and great yearly variation in catches due to natural causes. The variety of groups makes consensus difficult and undermines the use of control measures. The natural yearly variation in

the abundance of squid also makes fishers wonder whether restricting landings will affect the stock at all.

The cases of control at the landing site also have constraints. Firstly, most of the committees depend very much on the existence of a handful of influential individuals. Although the presence of such individuals is a strength in the short run, in the long run the sustainability of the committee is undermined when these individuals leave the committee if they are not replaced. Secondly, the area covered by local committees is limited: it only covers (a section of) one community. It therefore also tends to apply to only a limited number of (in-group/local/resident) fishers. This hypothesis is reinforced in the Ghanaian cases. The *Chief Fisherman and the Council of Elders* (in the community of Mumford) and the *Community fisheries management committee* (in the community of Egyan) have difficulty in enforcing local rules on non-community members, even if they fish in the community's waters. They are not sensitive to the community's social pressure, as they move on to elsewhere. The community itself has no means by which to enforce rules on outsiders.

An important constraint is therefore that there is no support of the local system of rules or of enforcement by formal or national authorities and laws. Egyan's *Community fisheries management committee* ended up confiscating undersized mesh nets used by migrant fishermen in Egyan's community waters. This is forbidden not just by Egyan's committee, but also by national law on mesh-sizes. The migrant fishers filed an official complaint and won the case that Egyan's committee stole their nets. Egyan's local system and sanctions were thus undone through the more formal legal system of conflict settlement. This case shows that, even in a context where the Government of Ghana is committed to promoting community-based fisheries management committees, a lot of work still needs to be done on clarifying what powers those community-based management committees have to apply local and national rules and sanctions.

### 5.1.3 The cases on surveillance at sea

The analysis of the case studies on surveillance at sea<sup>36</sup> (see table below) is more difficult because surveillance is a more complex activity than control at landing sites. Most of the strengths of the case studies tend to be snowed under by the constraints. One of the main strengths of the case studies is that they show an increasing willingness of governments to invest in artisanal fisheries management, and not just in industrial fisheries. However, this willingness is countered by malfunctioning of surveillance posts, breakdown of equipment and dishonesty of some surveillance staff. There where local fishers and government officials do work hard to do an honest job, the cases they pass on to the national level come to a grinding halt in bureaucratic procedures.

THE CASES ON SURVEILLANCE AT SEA

| Country    | Community         | Name of the case study  |
|------------|-------------------|---|
| Mauritania | Camps in the PNBA | <i>The Système de Surveillance du PNBA</i>                                |
| Guinea     | Bonfi, Koukoudé   | <i>The Surveillance Project</i>   |
| Ghana      | Tema              | <i>The Sub-Committee for Surveillance</i>                                 |
| Senegal    | Kayar             | <i>The Commission de Surveillance</i>                                     |
|            | Fass Boye         | <i>The Comité de Vigilance et de Sécurité</i>                             |
|            |                   | <i>The Projet Protection et Surveillance des Pêches au Sénégal (PSPS)</i> |

<sup>36</sup> The PNBA case is left out of this part of the analysis as there is not enough information to know whether it is effective and what factors contributed to this.

Why is this so? Overall, the case studies on surveillance show that the probability of an intruder into a forbidden zone being caught is low. This is especially so during certain periods: bad weather, rough seas, night time, etc. In the case studies, of the intruders that were caught, very few are prosecuted. Of those that are, convictions or actual payment of fines are rare.

First of all, at the level of running the surveillance posts the equipment is not always adapted to local conditions. Radars do not function due to unreliable electricity supplies, vessels are not fit to go out to sea at times when industrial vessels can still fish (bad weather, rough seas, night). Secondly, there are financial and other constraints for the running of the surveillance posts: lack of funds to pay for the fuel for patrol vessels, equipment is not maintained and breaks down, posts are understaffed, and so on.

As far as the patrol activity itself is concerned, there is a third point: the patrollers and sanctioners often have more incentives in breaking than in applying the rules. This is true for both the government surveillance posts and the fisher committees' surveillance activities. For example, in the case study *Surveillance Project* in Bonfi and Koukoudé, Guinean fishers are convinced that officers take incentives from captains of industrial fishing vessels intruding into the "artisanal fishing zone" not to report them. It is therefore in the officers' interest that industrial vessels keep intruding into the zone to keep this extra source of income. For the fisher committees, family and friends use social pressure to encourage committee members not to apply the rules to them. For example, in Kayar's *Comité de Surveillance* gill nets found in the zone destined for line fishing are simply left where they are or returned to the owners under pressure from local leaders who own the gear.

But most of the problems with the case studies on surveillance exist at the level of enforcement. Even if an formal complaint is made, the procedure for prosecution of industrial transgressors is too long and expensive for artisanal fishers. The procedures are often not very clear, they may take years to go through bureaucratic systems and tend to require the fishers to travel to the regional or national capital on various occasions. Once at national level, cases are often not even heard, but rather become blocked somewhere between different competent agencies. This is because mandates of formal agencies either overlap or do not cover responsibilities for prosecution of issues linked to artisanal fishing, leading to non-enforcement. There tend to be different agencies responsible for fisheries, navigation, sea safety, etc. and it is often not clear (or there is disagreement over) who is responsible for cases of intrusion or accidents between artisanal and industrial craft.

Even where official institutes are willing to resolve such cases, another problem crops up: the evidence gathered by artisanal fishers is often insufficient to hold as proof in the formal law system. Evidence tends consist of the artisanal fishers' word against that of the industrial vessel's captain as to where and how an intrusion or accident took place. This generally means that the best government officials can do is arrive at a settlement involving a low compensation to the artisanal fisher for damages done. However, such a settlement is generally not binding, so whether the payment is made or not is, in practice, up to the discretion of the owner of the industrial vessel.

#### **5.1.4 The specific case on surveillance at sea in Fass Boye**

The *Comité de Vigilance et de Sécurité* in Fass Boye, Senegal, is probably the most interesting of the case studies on surveillance at sea. It appears to be the only surveillance system that effectively deterred industrial vessels from intruding into "their" (artisanal) fishing zone -at least at first. The committee used methods that come down to hijacking of industrial vessels and extortion to achieve this "effectiveness", so it is not an example for others to follow. However, on an analytical level, it does serve to study strengths and constraints.

The *Comité de Vigilance et de Sécurité* in Fass Boye had certain strengths over the other cases studies on surveillance at sea. First of all, the committee was created on the basis of the community's economic and social interest, so they had full back up and support from the community. Secondly, it had low running costs: mainly canoes and fuel for the patrols. The community carried this cost, which weighed up to the benefit of keeping industrial vessels out of the "artisanal fishing zone". Thirdly, a large number of persons were involved in surveillance, all of them fishers themselves. They therefore had an interest in applying the rules and seeing results by keeping industrial vessels from overfishing their zone. As such, there was little scope for corrupting the controllers (fishers) carrying out the surveillance. Fourthly, the committee used social as well as financial sanctions and even violence to intimidate intruders. According to the case study, the controlling fishers hijacked industrial vessels that intruded into the "artisanal fishing zone", ensured the payment of "taxes" and "damages" from the owners for the release of the vessels, and ridiculed the captain of the vessel in the community. The combination of these sanctions was a real threat to both captains and owners of industrial vessels, and they started to avoid the Fass Boye area. This, of course, is exactly what the committee aimed to achieve. The fifth strength of this committee was that the whole process of surveillance, from initiation through execution to enforcement of sanctions, was in the hands of one entity: the fishers' committee. That made the procedures quick (although not particularly impartial) and the artisanal fishers had direct positive effects from their actions.

The main constraint of the *Comité de Vigilance et de Sécurité* in Fass Boye lay in the fact that local rules were not backed up by formal rules at national level. The methods used by the committee were simply illegal. The industrial captains and owners used the national law system to have the Fass Boye committee prohibited.

#### **5.1.5 Comparing surveillance at sea and controls at landing sites**

It would seem that the cases of controls at landing sites work better than the cases of surveillance at sea. However, it should be kept in mind that surveillance at sea is an activity that has constraints that controls at landing sites cases do not have. The table below gives a summary of why this is so:

## COMPARING ELEMENTS OF CONTROLS AT LANDING SITES AND SURVEILLANCE AT SEA

| Complicating factors for surveillance at sea  | Facilitating factors for controls at landing sites  |
|---|---|
| Surveillance affects fishers with of differing gear and technologies from inside and outside the community        | Controls affect a small group of people (the committee or its employees, which are also its members)  |
| Surveillance covers large areas of water which can be entered from all directions                                 | Control is carried out at the relatively restricted area of the landing site  |
| Surveillance has to be carried out at all times, including under difficult circumstances (bad weather, at night)  | Controls are carried during a defined space in time (during landings carried out at certain hours of the day)   |
| The surveillance at sea cases currently do not have a monitoring system for checking on the surveillance officers | There is little opportunity for bribing or cheating the enforcers as both the enforcers and the enforced are seen by the entire community while ensuring that the rules are followed. |
| Relatively advanced equipment is needed   | No real equipment is needed   |
| There are high expenses for operation and maintenance   | There are no or low implementation costs  |

Thus, in general, fisheries management rules or mechanisms are easier to implement when the rules or mechanisms apply:

- to a restricted group of people,
- in a restricted geographical area,
- at a defined moment in time,
- with limited opportunities for bribing or cheating.

Low levels of (or simple) equipment and low implementation costs and high and timely benefits increase the likelihood of effectiveness further.

### 5.1.6 Lessons learned from the case studies

Summarising, the case studies show a number of underlying issues that affect the effectiveness of a fishery management mechanism:

- Three elements act as a deterrent to potential transgressors:
  - a high enough sanction on breaking the rules,
  - a high enough probability of being caught, and
  - a high enough chance of the sanction being applied.
- The enforcers need to have a vested interest in up holding the fisheries management measures, otherwise bribery and corruption will undermine the measure.
- Homogenous, easily distinctive and small groups of fishers tend to be more effective in applying local rules and regulations to themselves than general rules covering a variety of fisher groups, applied by non-fishers.

Additional lessons can be learned from the case studies about compliance and effectiveness of fisheries management measures. First there is the aspect of cause and effect. Only when stakeholders feel that they are (partly) responsible for fisheries management problems and feel they have influence on it, will they be inclined to initiate or conform to fisheries management mechanisms. The clearer the underlying reasons and direct positive effects of fisheries management mechanisms, the likelier that fishers will accept them and abide by them.

The second lesson is about the process used in fisheries management. The case studies underlined the fact that fisher leaders and representatives who take part in

discussions and decisions with respect to fisheries management mechanisms need to be seen as legitimate. They must be taken seriously by those they represent as well as by government administrators. The process of discussion and decision making over fisheries management needs to be transparent, otherwise fishers will find reasons not to comply with the mechanisms.

Finally, any type of conflict in a community will undermine a fisheries management exercise. This is because there is not enough mutual trust between parties to come to an agreement or to trust each other with enforcement.

#### **5.1.7 Implications for livelihoods-centred fisheries management**

This section illustrates why it is important to distinguish different groups of fishers, as was discussed in Section 2.2. Fisheries management mechanisms which are adapted to specific groups or fishers, their fishing strategies and livelihoods, have a greater chance of being effective than those that are not. Government fisheries agencies can work with fishers on specifying the groups, the geographical areas and the fisheries management mechanisms that would be most appropriate for each.

This section also reinforces the point that when fishers can see the direct benefit for themselves of a fisheries management mechanism, they are more likely to abide by it (see also Sections 3.3 and 5). Fisheries management for the sake of fisheries management is not likely to interest fishers and they are less likely to participate in it to make it effective; fisheries management that will improve their livelihoods will. This is an argument in favour of participatory and livelihoods-centred fisheries management and a reason why fisheries agencies should adopt it. It supports the assumption of this study that responsible fisheries management actively involves artisanal fishers (see Section 1.1.4).

Another point that this section underlines is the need for rules and regulations at local level and at national level that strengthen each other, rather than contradicting each other. This is one of the underlying problems of enforcement. Another is that also mentioned in Section 3.1.3 of the variety of enforcing organizations. Apart from finding ways of increasing collaboration between these agencies, it would be in line with the decentralization process for countries to find ways of enforcing official rules at local levels, rather than at national levels. This will reduce the problem of distance and costs involved in trials and enforcement of sanctions, and more direct contacts between the parties involved in the resolution would probably put more pressure on them to comply with agreements made. FAO and other agencies could support countries in identifying how such "decentralization of enforcement" could be implemented.

## 5.2 The respective roles of artisanal fishers and government

### 5.2.1 Main points in this section

*Complementarity between government's and fishers' roles in fisheries management is essential to achieve effectiveness.*

- *Government and fishers tend to have separate fisheries management measures and enforcement systems, but they do influence each other.*
- *Local fisheries management committees' measures are most effective when backed by official laws.*
- *Commitment by both government and the community is essential for a management measure to be effective.*
- *Specifying the artisanal fisher group and government institutes involved in the different phases of fisheries management is useful to ensure meaningful participation of all relevant fisher groups and reducing the constraints of fisheries management.*

### 5.2.2 Phases of the fisheries management process

This Section addresses the different roles of government and fishers in the fisheries management mechanisms of the case studies. To facilitate analysis, several phases were distinguished in the fisheries management of the cases studied. The phases are:

- **Initiative:** who had the idea and took the effort of starting the fisheries management mechanism?
- **Creation:** who takes part in deciding on objectives, rules and functioning of the fisheries management mechanism?
- **Implementation:** who takes part in carrying out the fisheries management mechanism?
- **Sanctions:** who "judges" wrongdoers and determines what sanctions are applicable?
- **Enforcement:** who ensures that these sanctions are actually carried out?
- **Appeal:** who can those sanctioned turn to for reconsideration of their case when they feel they have been unjustly treated?

Although the case studies did not always go into detail about the different phases, it was possible to make the tables below, which give a rough indication of whether fishers -F- or government -G- had a leading role at each phase. There is a separate table for the case studies on controls at landing sites and the case studies on surveillance at sea. Where possible, the order of the case studies in the table goes from high involvement of fishers (at the top of the table) to low involvement of fishers (at the bottom of the table).



# THE ROLE OF FISHERS AND GOVERNMENT IN DIFFERENT STAGES OF "CONTROLS AT LANDING SITES"

| Case & community  | Initiative | Creation | Implementation | Sanction | Enforcement | Appeal   |
|---|------------|----------|----------------|----------|-------------|----------|
| <i>Community Management Committee</i><br>Egyan – Ghana              | F          | F        | F              | F        | F           | G/F      |
| <i>Chief fisherman and the Council of Elders</i><br>Mumford – Ghana | F          | F        | F              | F        | F           | G/F?     |
| <i>Commission des sennes tourmentes</i><br>Kayar – Senegal          | F          | F        | F              | F        | F           | No info. |
| <i>Comité de Pêche</i><br>Kayar – Senegal                           | F          | F        | F              | F        | F           | No info. |

It is clear from the above that artisanal fishers tend to be involved in fisheries mechanisms that concern control at the landing site. The government's role is, according to the information available from the case studies, limited to the "Appeal" phase of the fisheries management process.

The table below shows that government is more represented in surveillance activities, but that there is a greater variety between the cases in the roles that government and fishers play.

# THE ROLE OF FISHERS AND GOVERNMENT IN DIFFERENT STAGES OF "SURVEILLANCE AT SEA"

| Case & community   | Initiative | Creation | Implementation | Sanction | Enforcement | Appeal   |
|--|------------|----------|----------------|----------|-------------|----------|
| <i>Comité de Vigilance et de Sécurité</i><br>Fass Boye – Senegal | F          | F        | F              | F        | F           | G        |
| <i>Commission de Surveillance</i><br>Kayar – Senegal             | G (F)*     | F        | F              | F        | F           | No info. |
| <i>Sub-Committee for Surveillance</i><br>Tema – Ghana            | G          | G        | F              | G (F)    | G (F)       | G        |
| <i>Surveillance Project</i><br>Bonfi & Koukoudé – Guinea         | G          | G        | G (F)          | G        | G           | G        |
| <i>Système de Surveillance du PNBA</i><br>PNBA – Mauritania      | G          | G        | G (F)          | G        | G           | No info. |
| <i>PSPS</i><br>Fass Boye – Senegal                               | G          | G        | G              | G        | G           | G        |

\*The letters in brackets indicate a restricted role of that party in that particular stage.

From this table and earlier descriptions, a number of conclusions can be drawn about the case studies. One is that surveillance at sea is almost always initiated and executed by government. The case study of Fass Boye (Senegal) is the exception. In two of the six cases, fishers have a role in almost all the phases of the fisheries management process. In those where the role of government dominates, artisanal fishers' role is limited to:

- informal consultation on fishing and where to patrol (such as with the *Surveillance Project* at Bonfi and Koukoudé in Guinea); and
- joining in patrols as guides or participants (such as Kayar, the *PSPS* at Fass Boye, PNBA).

The case studies show that an important role for fishers is, as such, no guarantee for increased effectiveness of fisheries management mechanisms. The cases on surveillance at Fass Boye in Senegal (*Comité de Vigilance et de Sécurité*) and Tema in Ghana (*Sub-Committee for Surveillance*) are evidence of this.

An important role for fishers only leads to increased effectiveness of fisheries management mechanisms if:

- the fishers feel a commitment towards the activity, and
- government actively supports and backs the local activities (i.e. is also makes a commitment).

This is an important addition to the assumption of this study that states that active involvement of artisanal fishers in fisheries management will improve the effectiveness of management measures (see Section 1.1.4).

Whether in local / informal or in national / formal fisheries management measures, the government has a very important role in dispute settlement and enforcement in the last instance. It can therefore reinforce or undermine what initiatives taking place at local level and ensuring that justice is done.

### **5.2.3 Identification of the specific groups involved**

The above analysis gave an idea of whether fishers or government had a role in a certain phase of fisheries management<sup>37</sup>. But which artisanal fishers and which types of government organizations are they? As far as the case studies give information on the issue, the artisanal fishers in the fisheries management committees are mostly influential older men in the fishing community. They are owners of canoes and gear, fishing chiefs, representatives of different clans in a community<sup>38</sup>, councils of elders, often representatives of their communities to the outside world. Also, it would appear that resident fishermen would tend to be represented in the committees, rather than migrants. Although some of these committees, notably in Ghana, try to include other interest groups, others have very exclusive membership. The members of the Ghanaian committees rotate, for example but in Kayar, membership of the *Commission des sennes tournantes* and the *Comité de Pêche* is fixed.

When carried out by fishers, the initiative, creation, enforcement, application of sanctions, and appeal are generally carried out by the influential older men. Younger members of the group often carry out the implementation, or persons who have been specifically designated or are paid to do so.

On the side of the government, implementation of surveillance activities mainly involve several of the following agencies: the Navy, the Airforce, the MCS Unit of the Directorate of Fisheries, Maritime Navigation authorities, and, in the case of the PNBA in Mauritania, national park authorities.

The enforcement, application of sanctions, and appeal generally involve national level government institutes. They could consist of any number of the ones just mentioned under the implementation of surveillance, the police, the courts, or special Fisheries Commissions, Arbitration Committees, etc. As was mentioned in Section 3.1, the lack of transparency as to which organization is responsible for which phase of fisheries management causes constraints in the enforcement of fisheries management mechanism.

<sup>37</sup> See Degnbol in Tvedten and Hersoug (eds.), 1992 for a discussion of the role of the community and of external agents such as government agencies and projects for resource management in artisanal fisheries.

<sup>38</sup> After interactions with the Sub-Sector Capacity Building project, some local councils were adapted to include representatives of minority groups and women fish traders.

In the case studies of the *Commission de Surveillance* in Kayar, Senegal and with *Community Management Committee* in Egyan, Ghana, local government authorities - such as prefects and district directors- become involved in fisheries management. Here they serve as initiators of fisheries management mechanisms, or as arbitrators. However, they are not generally involved in implementation and enforcement. This level of government is only involved in these aspects insofar as they pass information about intrusions on to national level organizations.

#### **5.2.4 Implications for livelihoods-centred fisheries management**

It is clear from the analysis above that commitment by both government and fishers is essential for a management mechanism to be effective. Government and fishers' roles are most effective when they complement each other. If one of the roles is weak (such as commitment of fishers for surveillance in Tema, Ghana, or enforcement of regulations by government in Egyan, Ghana), the entire management mechanism fails. The fisheries councils mentioned under Section 3.2 could be used as a means for establishing more coherence between the government and fishers' roles and between local and national fisheries regulations. This would reduce the vulnerability of fishers to the sometimes arbitrary application of monitoring, control and enforcement.

Specifying the artisanal fisher group involved in the different phases of fisheries management is useful. As mentioned in other sections, it can identify which groups are represented in and which have to be included more actively. It also permits management mechanisms to be better directed at the included groups, their interests and livelihoods.

The identification of which government agencies are involved in each phase of fisheries management and what their role is, is essential in reducing the constraints of fisheries management as identified in this study. Only if it is clear who is responsible for what and only if there is co-ordination between government agencies will it become easier and more relevant for fishers to collaborate with government. The recommendations that are mentioned under Section 3 are relevant here.

In summary, both government and fishers need to be committed to identifying problems and finding solutions for fisheries management problems together. Clearly defining the role, responsibility and authority of each party, as well as communication and co-ordination processes to be followed, is an essential part of this process. The FAO and other agencies for international co-operation could assist the countries it works with by providing support to this process by identifying or training persons capable of facilitating or leading it. The limitations of such an approach are that it requires a lot of time and effort from the participants, and a positive outcome is not guaranteed. On the other hand, not going through a collaborative effort may lead to failures, as illustrated by the case studies.

## 5.3 Interaction between fisheries management and fisheries livelihoods

### 5.3.1 Main points in this section

*Fisheries management and livelihoods influence each other, rather than fisheries management simply positively affecting livelihoods.*

- *Unintended side effects of fisheries management measures prevail over intended benefits.*
- *Ineffective enforcement of formal and informal procedures for settling conflicts between artisanal and industrial fisheries tends to favour the latter.*
- *Fisheries management measures impact differently on different social groups.*
- *Existing and changing livelihood strategies affect the outcome of fisheries management measures.*

### 5.3.2 Beneficiaries and benefits of the cases on controls at landing sites

As stated in the "Introduction", in SLA terms, the objective of fisheries management is to improve fisheries' livelihoods through reduced vulnerability of fishers to reductions in fish resources, conflicts over those resources, the loss of rights to exploit the resources, and so on. Management should protect fisheries' livelihoods in the long run through the sustainable exploitation of the fish stock. One of the underlying assumptions of this study is that responsible fisheries management will improve artisanal fisheries' livelihoods, if fishers are actively involved in responsible fisheries management.

To evaluate the beneficiaries and benefits, it is necessary to know who the intended beneficiaries were, and what the intended benefits consisted of. This Section takes into account the extent to which fishers were actually involved in the fisheries management, as well as strengths and constraints described in previous Sections.

The intended beneficiaries of the controls at landing sites and the surveillance at sea were different in each case study. For the controls at landing sites in Ghana the intended beneficiaries were the artisanal fishers and the community of the villages of Mumford and Egyan. The intended beneficiaries of the controls at landing sites in Senegal (Kayar) were a group of owners of canoes with hand lines and with purse seines respectively. This is represented in the table below:

# INTENDED BENEFICIARIES OF THE CASES ON CONTROLS AT LANDING SITES

| Country | Community | Name of the case study                               | Intended beneficiaries                        |
|---------|-----------|--|---|
| Ghana   | Mumford   | <i>The Chief Fisherman and the Council of Elders</i> | Artisanal fishers of Mumford<br>The community |
|         | Egyan     | <i>The Community fisheries management committee</i>  | Artisanal fishers of Egyan<br>The community   |
| Senegal | Kayar     | <i>The Commission des sennes tournantes</i>          | Owners of canoes with purse seines            |
|         |           | <i>The Comité de Pêche</i>                           | Owners of canoes with handlines               |

The general benefits of each of the case studies were improved livelihoods, but each mechanism attempted to achieve this in a different manner. The intended benefits of the committees concerned with controls at landing sites consisted of:

- increasing price for fish landed through restricting the number of fishing trips (for the case studies in Kayar);
- regulation of social issues and protection of fish resources through the inspection of mesh sizes of nets and checks on other informal regulations (for the case studies in Mumford and Egyan).

The previous Sections show that controls at landing sites were carried out almost entirely by fishers. These cases were also relatively effective in achieving their aims. *The Commission des sennes tournantes* and the *Comité de Pêche* in Kayar (Senegal) partly succeeded in directly improving the incomes of the persons who are members of the committee by increasing the price for the fish they landed. The case studies also mention unexpected positive side-effects for committee members: the *Commission des sennes tournantes'* reduction in fishing trips has led to the purse seines lasting longer, so saving the net-owners money.

For some committees of the cases on controls at landing sites in Ghana, the organizational capacity and influence of the committee and its members has increased. An example is the case study on the *Chief Fisherman and the Council of Elders* in Mumford (Ghana). However, the even if these committees partially achieved their aims, the intended benefits for artisanal fishers of both this committee and the *Community fisheries management committee* in Egyan (Ghana) do not appear to have been achieved.

In a more general way, *vulnerability factors* such as reductions in conflicts over fish resources do not appear to have been reduced for the intended beneficiaries. For example, Egyan (Ghana) is still vulnerable to conflicts with migrant fishers who use nets with very small mesh sizes in their waters. The overall effect of the case committees' activities on the fish stock is unknown.

The communities as a whole do tend to derive some positive social and economic effects from the committees' non-fisheries activities. Examples are cleaner beaches and increased school attendance. Mumford (Ghana) has even received public recognition for these efforts by winning a prize for the cleanliness of its beach. Apart from these activities, fisher groups often use part of the income from its activities for community development ends.

### 5.3.3 Beneficiaries and benefits of the cases on surveillance at sea

For surveillance of the "artisanal fishing zone" the intended beneficiaries were generally the artisanal fishers in the surveillance area. For surveillance by the *Commission de Surveillance* in Kayar (Senegal) the intended beneficiaries were the resident line fishers and migrant gill net fishers. The *Comité de Vigilance et de Sécurité* in Fass Boye in Senegal was aimed to protect the interests of artisanal fishers from that community. The intended in the PNBA in Mauritania is less clearly defined: as the area is a park, it aims to protect fish stock and other natural assets for the country's population, future generations, tourists, and perhaps only in a later instance for the population living in the area. The intended beneficiaries of the surveillance activities are shown in the following table:

INTENDED BENEFICIARIES OF THE CASES ON SURVEILLANCE AT SEA

| Country    | Community         | Name of the case study  | Intended beneficiaries  |
|------------|-------------------|---|---|
| Mauritania | Camps in the PNBA | The <i>Système de Surveillance du PNBA</i>                                | The country's population<br>Future generations<br>Tourists<br>Populations in the PNBA |
| Guinea     | Bonfi, Koukoudé   | The <i>Surveillance Project</i>   | Artisanal fishers in the surveillance area  |
| Ghana      | Tema              | The <i>Sub-Committee for Surveillance</i>                                 | Artisanal fishers in the surveillance area  |
| Senegal    | Kayar             | The <i>Commission de Surveillance</i>                                     | Resident handline fishers<br>Migrant gill net fishers                                 |
|            | Fass Boye         | The <i>Comité de Vigilance et de Sécurité</i>                             | Artisanal fishers from Fass Boye  |
|            |                   | The <i>Projet Protection et Surveillance des Pêches au Sénégal (PSPS)</i> | Artisanal fishers in the surveillance area  |

The specific intended benefits of the cases on surveillance at sea were:

- exclusive access to certain fishing grounds for the intended beneficiaries (in all cases except the PNBA in Mauritania),
- reduction of conflicts (in Kayar),
- protection of fish stocks from overfishing (in all cases).

The case studies on surveillance at sea were not very effective in achieving their aims. It is not surprising, then, that the intended benefits of the surveillance were not achieved. A possible exception is the PNBA in Mauritania, but there is not enough information in the case studies to be sure. The *Comité de Vigilance et de Sécurité* in Fass Boye, Senegal was achieving the benefit of having exclusive access to certain fishing grounds for a while, but only until the committee was abolished.

The second benefit of reducing conflicts was not achieved either. At the time that the case study was written up, artisanal fishers in Fass Boye (Senegal) were still vulnerable to conflicts with intruding vessels. The conflict between resident (handline fishers) and migrant (gill net fishers) in Kayar, Senegal, is just as intense, if not more intense, than it was before the installation of the *Commission de Surveillance*.

Just as with the case studies on controls at landing sites, the overall effect of the committees and surveillance posts on the fish stock is unknown.

#### **5.3.4 Fisheries management as a means to ensuring sustainable livelihoods**

The above analysis shows that fisheries management is not necessarily a means to ensuring sustainable livelihoods for fishers. Although this is partly due to the constraints of the existing systems, some constraints are likely to remain and should be taken into account.

Probably the most important point to notice with respect to the case studies on fisheries management is that fisheries management cannot be a means to ensuring sustainable livelihoods for *all* fishers. Each of the cases studied has been designed to benefit one particular group of fishers often as opposed to another. For example, catch limitation lead to higher prices of fish for the fishermen but may reduce profits for fish processors and traders. Keeping trawlers out of the "artisanal fishing zone" to protect artisanal fishers and fish stocks may mean a reduction in income for industrial vessel owners, captain and crew. In other words, protecting one fisher groups' livelihood may adversely affect another group and this is inherent to fisheries management. Effective fisheries management mechanisms are therefore likely to increase tensions between social groups, because the mechanisms exclude access to resources for particular groups (such as industrial fishers in the "artisanal fishing zone"). This, too, should be taken into account when planning for fisheries management from a livelihoods perspective.

Taking this issue one step further, the case studies show that fisheries management measures do not necessarily favour the poorest or most vulnerable social groups. In the example of Ghana where small mesh sizes are prohibited in to protect juvenile fish, one of the groups affected by this measure would be beach seining groups. However, there are indications that this may be one of the poorer groups of artisanal fishers. Fishers' committees tend to be run by elder, relatively well off men, generally owner of boats and gear. Depending on the objectives of the committee, poorer, minority or non-represented groups' interests may or may not be taken into account.

The fact that the fisheries management mechanisms studied were mostly not very effective has led to an increase in the problems the mechanisms were trying to solve (incursions, accidents, conflicts, etc.). Consequently, already existing tensions between different groups (migrants and residents, industrial and artisanal fishers, fishers and fisheries administrations) have remained or increased. It also means that there are non-intended beneficiaries such as: the patrol officers of the surveillance system in Guinea who profit from the incentives received; migrants in Ekyan (Ghana) who profit from catching fish in a prohibited zone; industrial owners and captains which can continue to fish in the "artisanal fishing zone", and; generally those whose illegal activities were supposed to be stopped. All this can lead to tensions between social groups.

Fisheries management can contribute to or undermine sustainable livelihoods, depending on its objectives. For example, the conservation objectives in the *Parc National du Banc d'Arguin* in Mauritania create constraints to fisheries developments such as the use of outboard engines, which in turn may limit income earning possibilities for fisher communities. As was mentioned in Section 3.3, according to fisheries regulations in Ghana, small mesh sizes nets are prohibited so as to protect juvenile stock. However, the widespread use of such nets makes confiscating "illegal" nets not only an enormous task, but also a socially unacceptable one. The fact that fisheries management does not necessarily improve fisher communities' livelihoods

is an important conclusion to reach, as it questions the first of the assumptions of this study (see "Introduction").

On the one hand, protecting the long-term sustainability of stocks is in fishers' interests, as it ensures their livelihoods. On the other, stock protection need not be a priority for fishers. People are known to change livelihood strategies according to the opportunities and constraints available. A reduction in one stock may cause fishers to start learning to catch other species, to migrate, or to develop other economic activities, as they have done in the past.

### **5.3.5 The influence of livelihoods on fisheries management**

Various aspects of the livelihoods of artisanal fishers and fisher communities can impact on fisheries management. Many of them were mentioned in other Sections of this report, but here is a short summary:

- Livelihood assets such as existing networks and organizations amongst fishers can interact positively with fisheries management by forming a basis for fisheries mechanisms at the local level.
- Fisher groups with different attitudes to access to resources and social structure will perceive the same fisheries management mechanism in a different way and develop different livelihood strategies in reaction to it.
- Emigration, immigration and seasonal migration strategies can complicate participation of directly interested parties in the different phases of the fisheries management process.
- Fishers often also have other sources of livelihoods than fishing or other priorities than fisheries management mechanisms (e.g. health problems, access to inputs, winning a conflict, fluctuations in the economy) and therefore not wish to invest time in fisheries management.

In terms of laws and regulations, fisheries management does not just impact on fishers' livelihoods. The laws and regulations are one of the means to achieve or confirm access over livelihood resources. They therefore are actively used and constructed by different groups. This can be part of the groups' livelihood strategies. Different fisher groups will have access to different systems of laws and regulations - formal and informal, local and national - to do so (see Section 3.3). This is illustrated by the examples of the *Community fisheries management committee* at Egyan (Ghana) and the *Comité de Vigilance et de Sécurité* Fass Boye (Senegal). In both of these cases, local fisher committees apply local rules on fisheries to defend their interests and keep non-compliant "other fishers" out of their fishing area. These "other fishers" - migrants and industrial fishers - then turn to formal criminal law to defend their interests, claiming that the local rules applied to them were unjust or illegal.

Artisanal fishers and the fisheries administration also influence one another. In Ghana, the existing community management committee in Mumford served as a "model" for the national programme on community-based fisheries management. The Mumford committee in turn profited from training and support from this government programme and broadened its activities. In Senegal, government economic policy caused a drop in fish prices. This led to the creation of the *Commission des sennes tournantes* and the *Comité de Pêche* by fishers in Kayar. Another example is the *Comité de Vigilance et de Sécurité* (Fass Boye, Senegal). Its activities were of the reasons that Fass Boye was one of the first communities in Senegal in which a decentralized government surveillance posts was created.



#### **5.3.6 *Implications for livelihoods-centred fisheries management***

The relationship between fisheries management and sustainable livelihoods for fishers is thus far more complex and dynamic than stated in the assumptions of this study. This requires fisheries management to be flexible and to adapt to changes. The implications of all the above for livelihoods-centred fisheries management have been mentioned in the other Sections, and include: identification of different fisher groups, participation of those groups in fisheries management processes, clarification and balancing of fisheries management objectives, clarification of the roles of different government organizations and fisher groups, and improvement of enforcement.

## 6 TOWARDS LIVELIHOODS-CENTRED FISHERIES MANAGEMENT

### 6.1 Revisiting the assumptions

This Section briefly evaluates the underlying assumptions of this study, based on Sections 2-5, which described and analysed the livelihood aspects of artisanal fisheries and the various systems and organizations that regulate artisanal fishing.

#### REMINDER OF THE UNDERLYING ASSUMPTIONS OF THE OBJECTIVES

- *Overfishing is prevalent and negatively affects artisanal fishers' livelihoods.*
- *Responsible fisheries management is required to address this problem.*
- *Responsible fisheries management requires the active involvement of artisanal fishers.*
- *Active involvement of artisanal fishers improves the effectiveness of fisheries management measures.*
- *Effective fisheries management improves artisanal fishers' livelihoods.*

This study shows that the assumptions are oversimplifications of reality. For an implementing programme like the SFLP, they require further specification and nuances to be applicable. The first assumption, for example, could be rephrased to say that there are signs of overfishing in many fisheries, *but* that the situation needs to be specified in each case because it varies per resource, per region of a country and per type of fisheries (see Sections 2.1.3 and 2.1.5). Similarly, for the second assumption, fisheries management can resolve part of the problem of overfishing. However, employment opportunities in other sectors could also be a way of reducing the pressure on fishing resources. (Sections 2.1.3, 2.1.4 and 2.1.5). Furthermore, fisheries management measures can have purely biological objectives (such as in a park), and not take into account artisanal fishers' livelihoods.

In the third and fourth assumptions, the specific group of fishers and their type of involvement need clarification (Sections 2.2.1, 2.2.4, 5.3.2 for the artisanal fishers and Sections 3.2, 3.3 and 5.2). *Which* groups of artisanal fishers, with which types of fishing strategies and livelihoods strategies, need to be involved for the management of a certain type of fisheries in a certain region (at a specific time of the year, at a certain level of current exploitation of the resource, etc.). Will their active involvement consist of their implementing government rules, deciding on policy issues, or the fishers running their own local management scheme? These two assumptions have another assumption in them: that fishers should participate in government fisheries management, ignoring the possibility of government supporting local initiatives. The cases show that it is not so much active involvement, but *direct interest in and commitment* to a management measure by *both* government and fishers that lead to effective management measures. Enforcement is an essential element in effectiveness.

Finally, this study shows that effective fisheries management does not improve *all* fishers' livelihoods, certainly not in the short-run. Management involves giving rights to some and excluding others from accessing the industry. Those excluded will need some other means of livelihoods to survive.

## 6.2 Facilitating and complicating factors

A number of trends can be identified which are conducive to increased collaboration between fishers and government in fisheries management measures, as well as for an increased attention for livelihood aspects. Within communities and fisher groups there are already rules and committees governing fishing and there is an increasing awareness in communities of the need to protect stocks. In the government administration there is an increasing interest in artisanal fisheries. There are already processes of consultation with fishers for the elaboration of management plans and regulations. The ongoing decentralization processes whereby collaborations between communities and government are encouraged through such mechanisms as local fisheries councils and community-based fisheries management committees.

On the other hand, there are a number of factors that complicate increased collaboration between fishers and government in fisheries management measures and attention for livelihood aspects, especially at the level of implementation. Different groups of fishers and processors with different interests amongst whom there is competition, accidents and conflicts can make collaboration difficult. Generally speaking, there is a history of strained relations between fishers and government authorities. Often, government has been unable or unwilling to enforce already existing laws, and industrial fishers tend to benefit from this, to the detriment of artisanal fishers. Unclear mandates or *de facto* division of tasks between different government organizations concerned with fisheries and maritime matters hinder effective fisheries management. Communication mechanisms between different levels between local, regional and national government organizations are not always clear and the availability of human and financial resources for fisheries management initiatives tends to be a constraint, especially at the local level. Even if there are human resources available, their skills and training are not always sufficient for the tasks they are asked to carry out.

## 6.3 Recommendations for livelihoods-centred fisheries management

The facilitating and complicating factors can be used as points of departure for improving fisheries management. There are two types of issues that can be worked on to arrive at a more livelihoods-centred fisheries management. Both types of issue take place in any fisheries management exercise, but *how* this is done is important for the effects on fisheries' livelihoods:

1. All the phases in fisheries management, such as planning, implementation, MCS, and enforcement need to be addressed, both individually and as a whole, and clearly linked to livelihoods issues and objectives;
2. There should be a serious commitment to participation, representation, information and communication by those concerned with livelihoods and with fisheries management.

FAO, other international co-operation agencies and countries themselves should provide support to fishers and officials of government and other agencies to improve these two points. They can identify persons and means to support to stakeholders on the technical as well as on the process side. Some of these activities are already ongoing, but they could be expanded further. The sections below indicate more specifically what this support can consist of.

### **6.3.1 Improving the phases of fisheries management**

- *Awareness raising and training in fisheries management, management mechanisms and management phases, with reference to the CCRF.*

Insofar as knowledge and experience in fisheries management is insufficient, this can be improved by providing information and training based on the Code of Conduct for Responsible Fisheries and the Guidelines for Fisheries Management, adapted for different target groups (fishers, fisher associations, decentralized government officials, NGO's, literate and non-literate people, crew, owners and fishmongers, and so on).

- *Awareness raising and training on how to include livelihood considerations and objectives in fisheries management.*

This can be achieved by showing the importance of fisheries for the national populations' livelihoods, and the possible consequences of the collapse of some fisheries. Activities would include gathering, analysing and providing social, economic and other livelihoods data on fisheries to decision makers and stakeholders in a form that is readily accessible to them. A second way to ensure that livelihoods considerations are taken into account in fisheries management is to have a greater number of fisher representatives from different fisher groups actively represented in decision-making. A third way is to sensitize decision-makers to the livelihood impacts.

- *Exchange of experiences on fisheries management and management mechanisms through case studies, etc.*

Where some knowledge and experience in fisheries management already exists, exchanges can help identify alternatives to or improvements in current practices. Such exchanges could take the form of meetings on specific topics or study tours to a specific area or country where a certain type of (formal or informal) fisheries mechanism is being put in place. Again, they need to be adapted to the target group.

### **6.3.2 Improving the fisheries management process**

- *Awareness raising, training and exchange of experiences on participation and participatory mechanisms at national, local and community levels and supporting decentralization and the shift from consultation to co-management.*

As in the points above, this information, training and exchange of experiences can be based on existing materials within FAO, for example Community Forestry (FONP) and the Extension Service's (SDRE) publications. These, again, need to be tailored to specific target groups and should include aspects such as the advantages and disadvantages of different types of participation in different situations.

- *Capacity building of fishers' organizations and strengthening their representation in formal processes.*

Whether at local or at national scale, fishers' organizations and their representatives could benefit from support to make their position in formal fisheries management processes stronger. How exactly this should be done should be identified in collaboration with these organizations.

- *Improved collaboration and communication between stakeholders, including the poorest fishers.*

This issue can either be tackled directly or in a more indirect way. A direct way would involve a series of meetings or workshops that aim at identifying constraints and ways of improving collaboration or communication. A more indirect way would be to carry out a number of activities (such as the training or exchange visits suggested above) in a mixed group of stakeholders (from fishers, local government, national government, etc.).

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## **8 APPENDIXES**

### **8.1 Expected Outputs of the Sustainable Fisheries Livelihoods Programme**

- National fisheries plans and policies improved through adoption of relevant CCRF principles and national poverty alleviation planning which accounts for fisheries communities' needs
- Improved capacity of communities and their partners to participate in planning and management for fisheries livelihoods;
- Co-management systems established and functioning;
- Eco-systems and the resources they support enhanced and/or protected
- Economic and social benefits from the artisanal sub-sector enhanced.
- Policies, institutions and processes informed by dissemination of SFLP experience and knowledge.
- Effective institutional network for programme implementation established.



## **8.2 Causes of accidents at sea (from the four country reports)**

Most of the causes mentioned come from Joal-Fdiouth in the Region of Petite Côte, Senegal, which does not constitute a case study community. However, the area is one of the most productive fishing zones in the country, and the region where most accidents occur. It illustrates well the causes of accidents. Additional causes have been added from the cases of Bonfi and Koukoudé in Guinea.

### **8.2.1 Causes related to fishing practices**

- *overloading canoes with fish causes instability and possible capsizing ;*
- *fishing further out to sea with canoes insufficiently adapted to the conditions there may lead to the capsizing of the vessel ;*
- *engine break down or lack of fuel, leaving a canoe without a means of propulsion ;*
- *use of explosives for fishing.*

### **8.2.2 Causes related to visibility**

- *artisanal fishing with un-marked gear, so that other vessels run over and damage them ;*
- *collisions caused by unnoticed trawlers fishing in the inshore zone at night without lights;*
- *canoes lack radar reflectors and are not detected by bigger vessels in the offshore zone, causing collision ;*
- *canoes cannot lift anchors on time, or leave quickly enough if a larger vessel is in a collision course with them ;*
- *use of fires on canoes to alert bigger vessels of their presence, leading to explosions of fuel tanks ;*
- *industrial vessels are too fast or use automatic pilot, so that they cannot change course in time to prevent collision.*

### **8.2.3 Causes related to interactions between artisanal and industrial fishing**

- *illegal transfer of fish from industrial to artisanal vessels means that the vessels involved come too close, causing damage to the smaller ;*
- *artisanal vessels fishing for shark near industrial vessels which throw by-catch overboard.*

### **8.2.4 Complicating factors**

- *lack of safety equipment or alternative means of propulsion on board means survival after an accident or engine failure is reduced ;*
- *cultural attitudes and beliefs which lead to a fatalistic attitude towards safety ;*
- *safety gear is often unavailable on local markets ;*
- *fishers of multiple nationalities and origins active in the same area lead to misunderstandings, miscommunications, disagreements and accidents ;*
- *in the northern most countries with cold currents, hypothermia means survival time of crewmembers who end up in the cold water after an accident is very short.*

This publication presents the lessons learned during a study on fisher participation in fisheries management as well as ways of supporting livelihoods through responsible fisheries management. It is intended primarily for government staff, non-governmental organizations and staff in other agencies working on artisanal fisheries management and poverty alleviation in developing countries.

The study is based on ten case studies in four West African countries. The analysis focuses primarily on three topics: the role of artisanal fishers and government in marine fisheries management; issues and constraints in existing marine fisheries management; and the effect of marine fisheries management on artisanal fisheries' livelihoods.

Results show that artisanal fishers are generally involved in local, informal fisheries management measures, which coexist with national, formal measures initiated by the fisheries administration. Both of these have constraints, and would be more effective if each were supported by the other. This requires commitment from all parties. Although fisheries management aims to improve fishers' livelihoods in the long term, in the short term there are indications that the more powerful groups benefit economically, while poorer groups' livelihoods may continue to be threatened.

Improvements are needed in two main areas to arrive at a more livelihood-centred fisheries management. First, all phases in fisheries management, such as planning, implementation, monitoring, control and surveillance and enforcement, need to be addressed, individually and as a whole, and clearly linked to local-level livelihoods and management issues. Second, there should be a serious commitment to participation, representation, information and communication by all those concerned with livelihoods and with fisheries management.

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